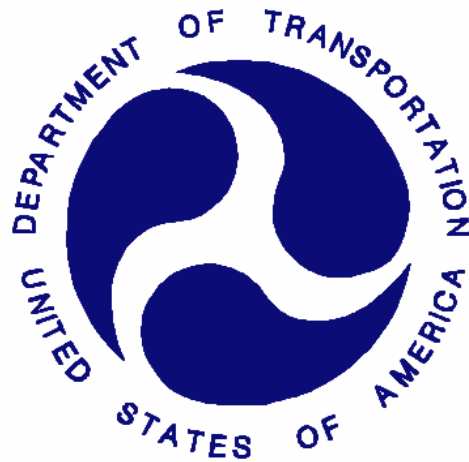


REPORT NUMBER: 214D-MGA-2009-004

**SAFETY COMPLIANCE TESTING FOR FMVSS 214
SIDE IMPACT PROTECTION**

**FORD MOTOR COMPANY
2009 MERCURY SABLE
NHTSA NUMBER: C90207**

**PREPARED BY:
MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105**



Test Date: April 1, 2009


Report Date: April 24, 2009

FINAL REPORT


**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
1200 NEW JERSEY AVENUE, SE, ROOM W43-503
WASHINGTON, D.C. 20590**

This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-07-D-00062.

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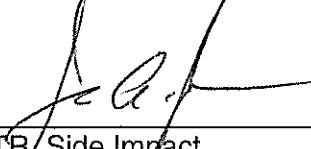
Prepared by: 
Joe Fleck, Project Engineer

Date: 4/24/2009

Reviewed by: 
David Winkelbauer, Facility Director

Date: 4/24/2009

FINAL REPORT ACCEPTED BY:


COTR, Side Impact

4/29/09
Date of Acceptance

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15. Supplementary Notes																					
16. Abstract A 48/24 km/h 90° Moving Deformable Barrier Compliance Test was conducted on the subject 2009 Mercury Sable in accordance with the specification of the Office of Vehicle Safety Compliance Test Procedure No. TP-214D-08 Side Impact Protection for determination of FMVSS 214 Side Impact Protection. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on April 1, 2009. The impact velocity of the Moving Deformable Barrier (MDB) was 52.9 km/h and the ambient temperature at the struck side (drivers) of the vehicle was 21°C. The target vehicle's maximum post test static crush was 216 mm at level 2. The test vehicle's occupant performance is as follows: <table style="margin-left: auto; margin-right: auto; border: none; width: 80%;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>DRIVER</u></th> <th style="text-align: center;"><u>PASS.</u></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) Accel., g</td> <td style="text-align: center;">17.8</td> <td style="text-align: center;">43.9</td> </tr> <tr> <td>Left Lower Rib (LLR) Accel., g</td> <td style="text-align: center;">21.2</td> <td style="text-align: center;">35.5</td> </tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td> <td style="text-align: center;">34.8</td> <td style="text-align: center;">44.5</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td style="text-align: center;">28</td> <td style="text-align: center;">44</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td style="text-align: center;">41.7</td> <td style="text-align: center;">49.4</td> </tr> </tbody> </table> <p>The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.</p>					<u>DRIVER</u>	<u>PASS.</u>	Left Upper Rib (LUR) Accel., g	17.8	43.9	Left Lower Rib (LLR) Accel., g	21.2	35.5	Lower Spine (T ₁₂) Accel., g	34.8	44.5	Thoracic Trauma Index (TTI)	28	44	Pelvis (PEV) Accel., g	41.7	49.4
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SECTION 1

PURPOSE AND TEST PROCEDURE

PURPOSE

This side impact test was conducted as part of the FY' 2009 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-07-D-00062. The purpose of this test was to evaluate side impact protection in a 2009 Mercury Sable manufactured by Ford Motor Company.

TEST PROCEDURE

The side impact test was conducted in accordance with the current National Highway Traffic Safety Administration (NHTSA), Office of Vehicle Safety Compliance (OVSC), Laboratory Test Procedure TP-214D-08, dated December 15, 2006 and the corresponding MGA Research Corporation Test Procedure MGA-NHTSA2. The procedures for receiving, inspection, testing, and reporting of test results are described in the test procedures and are not repeated in this report.

MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes.

SECTION 2

SUMMARY OF FMVSS 214 TEST

A model year 2009 Mercury Sable was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 52.9 km/h. The specified impact velocity range is from 52.1 to 53.8 km/h. The test (target) vehicle was stationary and positioned 63° to the line of forward motion. The weight of the vehicle as tested was 1955.0 kg and the test weight of the MDB was 1361.5 kg. The test was conducted at MGA Research Corporation in Burlington, Wisconsin on April 1, 2009.

One (1) real-time motion picture camera and nine (9) high-speed motion picture cameras were used to document the impact event. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information are documented in the data sheets. Pre- and post-test photographs of the vehicle and Side Impact Dummies (SIDs) can be found in Appendix A. Two 50th percentile adult male SIDs were placed in the driver and left rear passenger designated seating positions according to instructions specified in the OVSC Laboratory Test Procedure dated December 15, 2006. Each SID was instrumented in the following locations:

- Left Upper Rib (LUR) uni-axial accelerometer (Y-axis primary and redundant)
- Left Lower Rib (LLR) uni-axial accelerometer (Y-axis primary and redundant)
- Lower Thoracic Spine (T12) uni-axial accelerometer (Y-axis primary and redundant)
- Pelvic (PEV) section uni-axial accelerometer (Y-axis primary and redundant)

The test vehicle was instrumented with twenty (20) structural accelerometers and the MDB was instrumented with five (5) accelerometers and two (2) contact switches on the bumper to compare left side to right side bumper impact timing. All data channels were recorded with a fully self contained on-board DTS TDAS Pro Data Acquisition System. The data was digitally sampled at 10,000 samples per second and processed per Appendix V of the Test Procedure.

2.2 GENERAL COMMENTS

The test vehicle sustained a maximum static crush of 216 mm at level 2, 1350 mm rearward of the vertical impact point. The driver and passenger SIDs, Serial Nos. 037 and 036 respectively, were calibrated just prior to this test.

Appendix A contains the still photograph prints. Appendix B contains the response data traces. Appendix C contains the dummy calibration data. Appendix D contains the calibration information.

SECTION 2 (continued)
SUMMARY OF FMVSS 214 TEST

The occupant data is summarized below:

ATD position	TTI (G's)	Peak Pelvis (G's)
Driver	28	41.7
Passenger	44	49.4

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Information	Left Front (Driver)		Left Rear (Passenger)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	No	No	
Side Airbag	Yes	Yes	No	
Curtain Airbag	Yes	Yes	Yes	Yes

TEST NOTES

There was no valid data collected for:

Left Lower B-Post Y

Vehicle CG Y

The following accelerometers were not used for this test:

Rear Seat Track

DATA SHEET NO. 1**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2009 Mercury Sable
 Test Program: FMVSS 214

NHTSA No. C90207
 Test Date: 4/01/2009

TEST VEHICLE INFORMATION

Make	Ford
Model	Mercury Sable
Body Style	4 Door
NHTSA No.	C90207
VIN	1MEHM40W99G629150
Color	Cinnamon Clearcoat Metallic
Delivery Date	3/3/09
Odometer Reading (mile)	153.3
Dealer	Boucher Fleet Group
Transmission	Automatic
Final Drive	Front
Number of Cylinders	6
Engine Displacement (L)	3.5
Engine Placement	Lateral
Automatic Door Locks (ADL)	Yes
Owner's Manual Details Instructions on Disabling ADLs	Yes

TEST VEHICLE OPTIONS

Driver Front Airbag	Yes
Driver Side Airbag	Yes
Driver Curtain Airbag	Yes
Rear Passenger Side Airbag	No
Rear Passenger Curtain Airbag	Yes
Power Steering	Yes
Power Door Locks	Yes
Tilt Wheel	Yes
Anti-lock Brakes	Yes
Traction Control	Yes
All Wheel Drive	No
Power Seats	Yes
Pretensioners	Yes
Load Limiters	Yes
Bucket Seats	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Ford Motor Company	GVWR (kg)	2250
Date of Manufacture	01/09	GAWR Front (kg)	1225
		GAWR Rear (kg)	1066

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold / Test Pressure (kPa)	220	220
Recommended Tire Size	P215/60R17	P215/60R17
Tire Size on Vehicle	P215/60R17	P215/60R17
Tire Manufacturer	Continental	Continental

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench		
Number Of Occupants	2	3		5
Capacity Wt. (VCW) (kg)				430
Cargo Wt. (RCLW) (kg)				91

DATA SHEET NO. 1 (continued)**GENERAL TEST AND VEHICLE PARAMETER DATA**Test Vehicle: 2009 Mercury SableNHTSA No. C90207Test Program: FMVSS 214Test Date: 4/01/2009**TEST VEHICLE WEIGHTS**

	Units	As Delivered (UVW) (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	526.2	332.0		571.0	445.0	
Right	kg	521.2	330.7		517.6	421.4	
Ratio	%	61.2	38.8		55.7	44.3	
Totals	kg	1047.4	662.7	1710.1	1088.6	866.4	1955.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1710.1
Weight of 2 P572F ATDs	kg	161.4
Rated Cargo/Luggage Weight (RCLW)	kg	91
Calculated Vehicle Target Weight (TVTW)	kg	1962.5

* Actual As Tested Weight (ATW) will be TVTW -5/-10 kg

Weight of Ballast in trunk area: 47.6 kg**TEST VEHICLE ATTITUDES AND CG**

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	739	742	747	753	1113
As Tested	mm	728	742	709	718	1273
Fully Loaded	mm	726	742	700	718	

TEST VEHICLE VERTICAL IMPACT LINE DATA

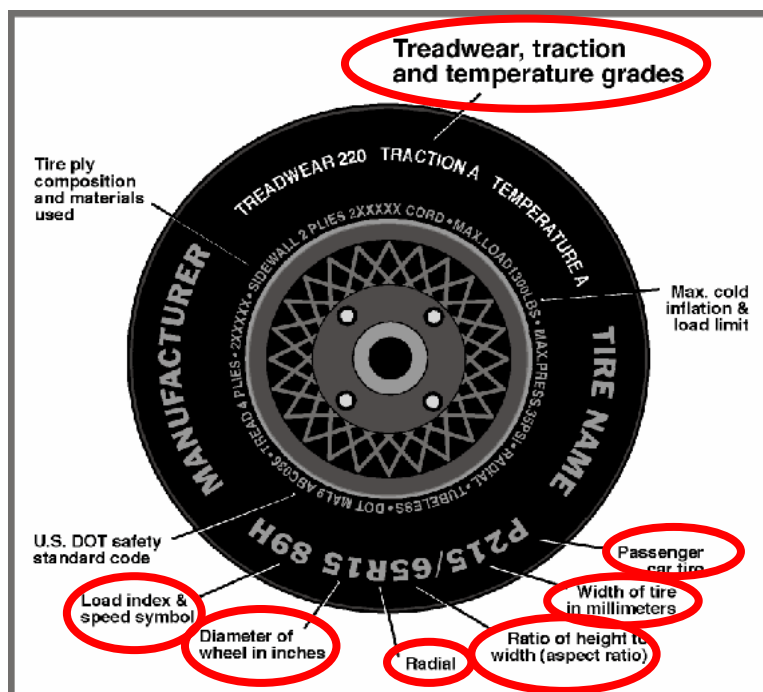
Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2872
Target Impact Point Aft of Front Axle	mm	496
Actual Impact Point Aft of Front Axle	mm	493

DATA SHEET NO. 2

TEST VEHICLE TIRE INFORMATION

Test Vehicle: 2009 Mercury Sable
 Test Program: FMVSS 214

NHTSA No. C90207
 Test Date: 4/01/2009



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold / Test Pressure (kPa)	220	220
Recommended Tire Size	P215/60R17	P215/60R17
Tire Size on Vehicle	P215/60R17	P215/60R17
Tire Manufacturer	Continental	Continental
Tire Name	Conti Touring Contact	Conti Touring Contact
Tire Type	Passenger	Passenger
Tire Width (mm)	215	215
Ratio of Height to Width (aspect ratio)	60	60
Radial	R	R
Wheel Diameter	17	17
Load Index & Speed Symbol	95T	95T
Treadwear	360	360
Traction Grade	A	A
Temperature Grade	A	A

DATA SHEET NO. 3
TEST VEHICLE INFORMATION

Test Vehicle: 2009 Mercury Sable
Test Program: FMVSS 214

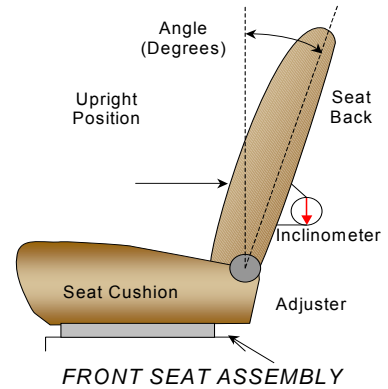
NHTSA No. C90207
Test Date: 4/01/2009

NORMAL DESIGN RIDING POSITION

The driver seat back is positioned to the manufacturer's designated angle. The procedure is as follows: The seat back angle is measured relative to the rocker sill, set seat back angle at 6.4 degrees (from vertical) at headrest post.

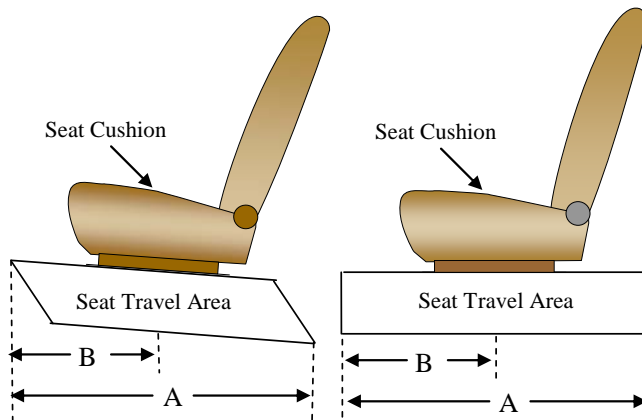
Driver seat back angle: 6.8 degrees (zero off rocker sill)

Passenger seat back angle: Fixed



SEAT FORE/AFT POSITIONS

	Total Fore/Aft Travel	Placed in position #
Driver Seat	285 mm	142.5 mm (forward-most as 0)
Rear Seat	Fixed	Fixed



SEAT BELT UPPER ANCHORAGES

The D-ring anchorage was placed in the uppermost position.

DATA SHEET NO. 3 (CONTINUED)

TEST VEHICLE INFORMATION

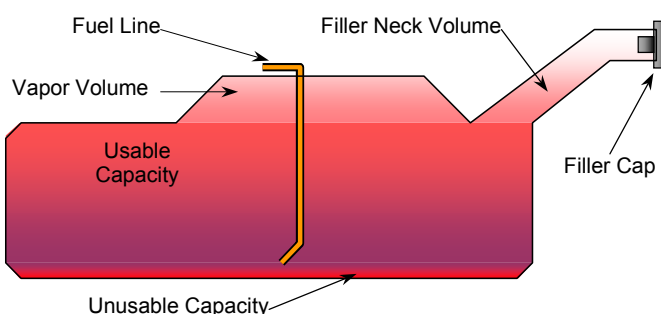
Test Vehicle: 2009 Mercury Sable
Test Program: FMVSS 214

NHTSA No. C90207
Test Date: 4/01/2009

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	77.6
Usable Capacity of "Optional" Tank	
92-94% of Usable Capacity	71.4 – 72.9
Actual Amount of Solvent used	71.9
1/3 of Usable Capacity	25.9

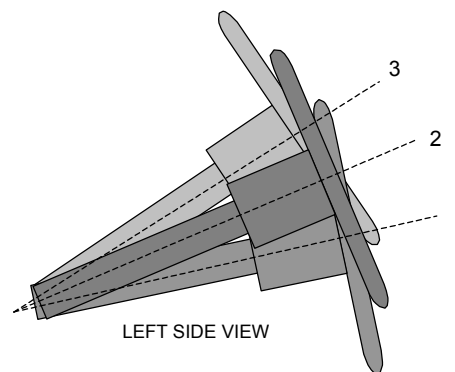
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for 2 seconds to pressurize the fuel system following the actuation of the ignition. If no attempt has been made to start the engine within 2 seconds following ignition actuation the fuel pump will shut off. The fuel pump operates continuously while the engine is running. If the engine stalls the fuel pump is deactivated. Also, a fuel pump shut-off switch is provided and is designed to stop fuel flow to the engine if the vehicle sustains an impact above a certain magnitude.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed on the plate and the angle is measured.



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITION

	Fore/Aft (mm)	Degrees
Lowermost position No. 1		68.6
Geometric center position No. 2		66.2
Uppermost position No. 3		63.8

DATA SHEET NO. 4
MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Test Vehicle: 2009 Mercury Sable
 Test Program: FMVSS 214

NHTSA No. C90207
 Test Date: 4/01/2009

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1252
Overall Length Including Honeycomb Face	4115
Wheel base of Framework Carriage	2592
C.G. Location aft of Front Axle	1129

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	411.8	281.6	
Right	kg	356.8	311.3	
Ratio	%	56.5	43.5	
Totals	kg	768.6	592.9	1361.5

SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	52.1 to 53.8	52.9
Trap No. 2 Velocity (Redundant)	km/h	52.1 to 53.8	52.8
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.8

POST TEST OBSERVATIONS
MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	3 forward
Vertical Offset	mm	+/-20	2 up

DATA SHEET NO. 5
POST TEST OBSERVATIONS

Test Vehicle: 2009 Mercury Sable
Test Program: FMVSS 214

NHTSA No. C90207
Test Date: 4/01/2009

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID	Rear Seat SID
Dummy Type / Serial No.	SID / 037	SID / 036
Head Contact	Curtain Airbag, Headrest, Headliner	Curtain Airbag, Headliner
Upper Torso Contact	Side Airbag	Door Panel
Lower Torso Contact	Door Panel	Door Panel
Left Knee Contact	Door Panel	Door Panel
Right Knee Contact	Left Knee	Left Knee

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Locked/Unlocked Doors	Doors were unlocked	Doors were unlocked
Left Side Door Opening	Door remained closed and latched	Door remained closed and latched
Right Side Door Opening	Door remained closed and latched; Door opened without tools	Door remained closed and latched; Door opened without tools
Seat Movement	0	0
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No Separation
Sill Separation	None
Windshield Damage	None
Window Damage	Left Rear Window Broke
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Information	Left Front (Driver)		Left Rear (Passenger)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	No	No	
Side Airbag	Yes	Yes	No	
Curtain Airbag	Yes	Yes	Yes	Yes

DATA SHEET NO. 6
SID INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2009 Mercury Sable
 Test Program: FMVSS 214

NHTSA No. C90207
 Test Date: 4/01/2009

THORAX AND PELVIS PEAK ACCELERATIONS (FIR 100 FILTERED)

Location	Units	Driver				Left Rear Passenger			
		Positive	Time, ms	Negative	Time, ms	Positive	Time, ms	Negative	Time, ms
Upper Rib Y	G's	17.8	33.2	-2.6	203.9	43.9	43.2	-51.6	88.2
Upper Rib Yr	G's	17.9	33.2	-2.5	204.5	43.9	43.2	-26.7	87.6
Lower Rib Y	G's	21.2	30.8	-2.5	71.3	35.5	42.0	-39.8	87.6
Lower Rib Yr	G's	22.2	30.7	-2.7	71.4	36.0	41.9	-124.1	88.9
Lower Spine Y	G's	34.8	35.1	-4.3	59.5	44.5	47.6	-6.7	97.0
Lower Spine Yr	G's	34.9	35.1	-3.9	60.1	44.1	47.6	-7.3	97.0
Pelvis Y	G's	41.7	34.4	-6.9	61.4	49.4	44.4	-4.2	92.6
Pelvis Yr	G's	41.9	34.4	-7.0	61.4	49.5	44.4	-4.1	92.6

THORACIC TRAUMA INDEX (TTI) AND PELVIS ACCELERATION (FIR 100 FILTERED)

Location	Driver				Left Rear Passenger			
	LLR	T ₁₂	TTI (g)	PEV (g)	LUR	T ₁₂	TTI (g)	PEV (g)
Rib, Spine, and Pelvis	21.2	34.8	28	41.7	43.9	44.5	44	49.4
Rib, Spine, and Pelvis Redundant	22.2	34.9	29	41.9	43.9	44.1	44	49.5

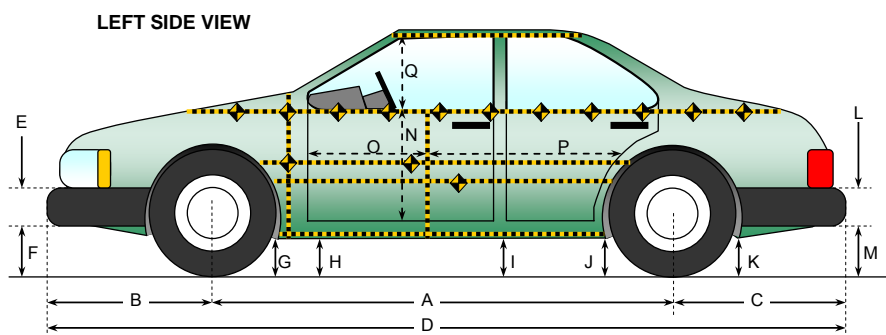
Positive Acceleration Polarities:
 (Conforms to SAE J211)

Longitudinal (X) = Forward
 Lateral (Y) = Right
 Vertical (Z) = Down

DATA SHEET NO. 7
VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2009 Mercury Sable
 Test Program: FMVSS 214

NHTSA No. C90207
 Test Date: 4/01/2009



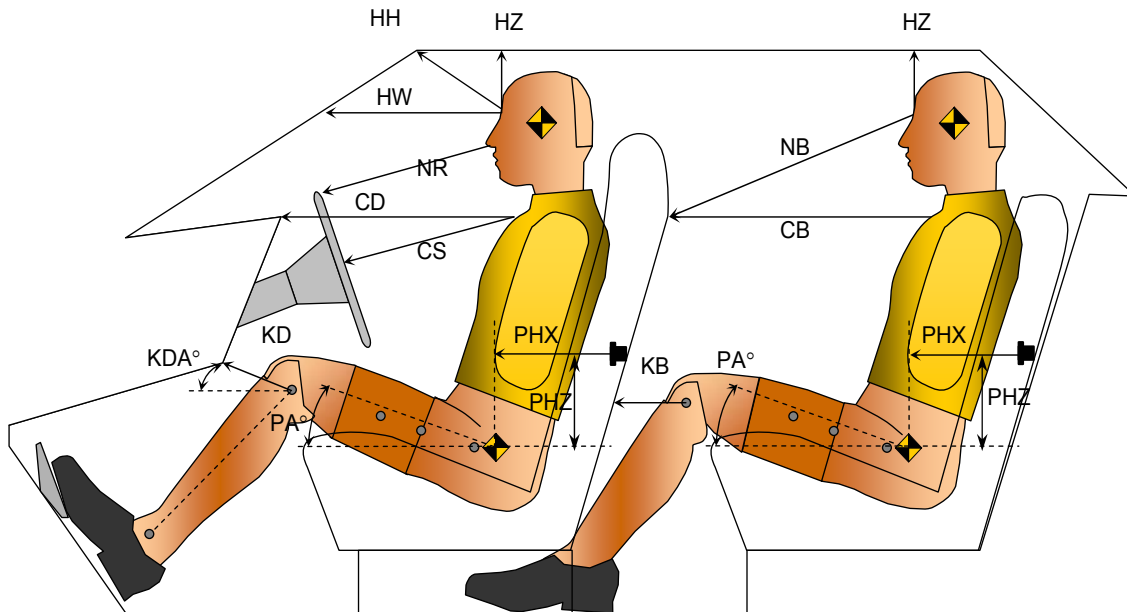
All Measurements in mm

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2872	2853	-19
B	Front Axle to FSOV	1057	1048	-9
C	Rear Axle to RSOV	1189	1175	-14
D	Total Length at Centerline	5118	5076	-42
E	Front Bumper Thickness	165	165	0
F	Front Bumper Bottom to Ground	299	308	9
G	Sill Height at Front Wheel Well	146	171	25
H	Sill Height at Front Door Leading Edge	157	181	24
I	Sill Height at "B" Pillar	157	177	20
J1	Sill Height at Rear Wheel Well	154	193	39
J2	Pinch Weld Height at Rear Wheel Well	152	185	33
K	Sill Height Aft of Rear Wheel Well	198	246	48
L	Rear Bumper Thickness	253	253	0
M	Rear Bumper Bottom to Ground	344	346	2
N	Sill Height to Window Bottom Sill	791	720	-71
O	Front Door Leading Edge to Impact CL	798	771	-27
P	Rear Door Trailing Edge to Impact CL	1338	1159	-179
Q	Front Window Opening	428	409	-19
R	Right Side Length	4402	4407	5
S	Left Side Length	4402	4390	-12
T	Vehicle Width at "B" Post	1887	1788	-99

DATA SHEET NO. 8 **SID LONGITUDINAL CLEARANCE DIMENSIONS**

Test Vehicle: 2009 Mercury Sable
 Test Program: FMVSS 214

NHTSA No. C90207
 Test Date: 4/01/2009

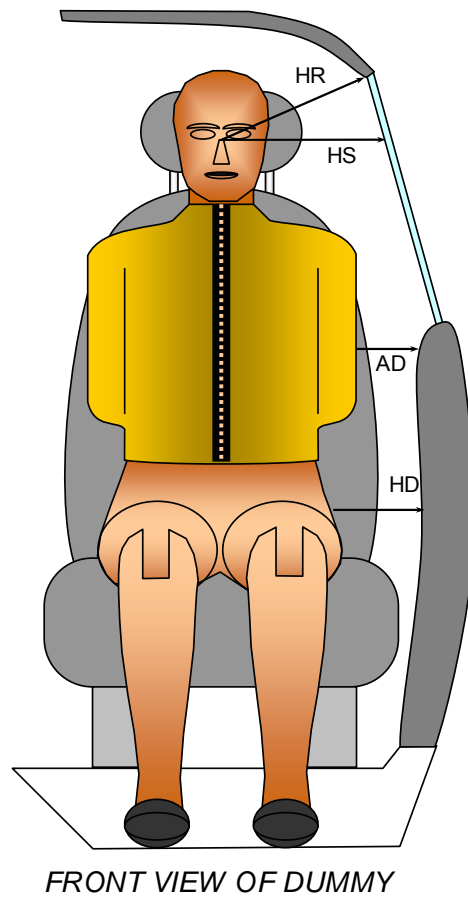


Driver Code	Pass. Code	Measurement Description	Driver S/N 037		Passenger S/N 036	
			Length(mm)	Angle(°)	Length(mm)	Angle(°)
HH		Head to Header	342			
HW		Head to Windshield	603			
HZ	HZ	Head to Roof	161		191	
NR	NB	Nose to Rim/Nose to Seatback	428		721	
CD	CB	Chest to Dash or Seatback	544		659	
CS		Chest to Steering Wheel	333			
KDL	KBL	Left Knee to Dash or Seatback	150	22.8	307	10.6
KDR	KBR	Right Knee to Dash or Seatback	152	22.0	310	11.6
PA	PA	Pelvic Angle		23.7		23.5
PHX	PHX	H-Point to Striker (X-Axis)	232		236	
PHZ	PHZ	H-Point to Striker (Z-Axis)	168		268	

DATA SHEET NO. 9
SID LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2009 Mercury Sable
 Test Program: FMVSS 214

NHTSA No. C90207
 Test Date: 4/01/2009

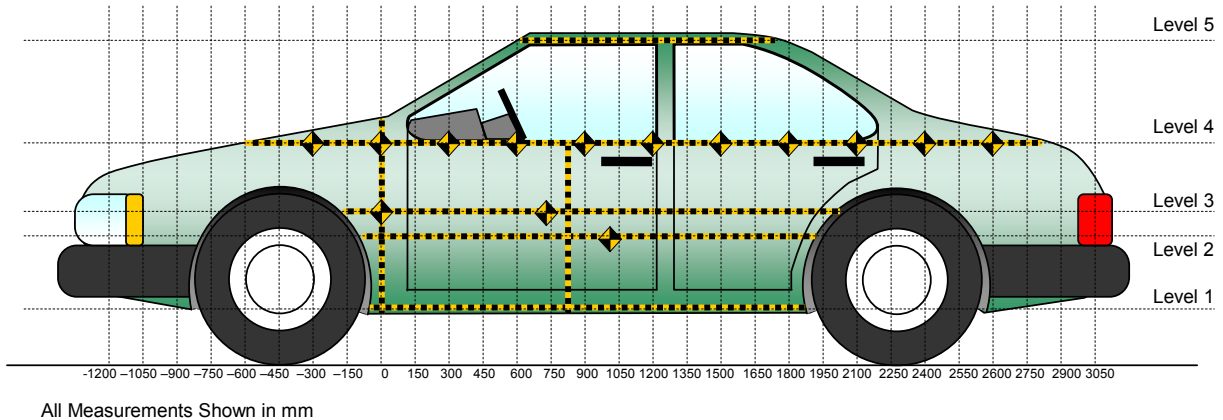


Code	Measurement Description	Units	Driver S/N 037	Passenger S/N 036
HR	Head to Side Header	mm	205	193
HS	Head to Side Window	mm	333	309
AD	Arm to Door	mm	102	94
HD	H-Point to Door	mm	125	138

DATA SHEET NO. 10 **VEHICLE SIDE MEASUREMENTS**

Test Vehicle: 2009 Mercury Sable
 Test Program: FMVSS 214

NHTSA No. C90207
 Test Date: 4/01/2009



LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.
 Measurements along the vertical 800 mm.
 All measurements below in mm.

Level	Measurement Description	Maximum Exterior Static Crush	Distance From Impact	Height Above Ground
5	Window	12	1200	1462
4	Window Sill	98	1200	990
3	Mid Door	187	1050	630
2	Occupant H-Point	216	1350	452
1	Sill Top	41	1050	220
	Maximum Penetration	216		

DATA SHEET NO. 11
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2009 Mercury Sable
 Test Program: FMVSS 214

NHTSA No. C90207
 Test Date: 4/01/2009

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-600				259					260					1	
-450				254					261					7	
-300				247					265					18	
-150			154	245				174	252				20	7	
0	230	170	168	240		240	207	200	244		10	37	32	4	
150	231	170	164	240		246	283	262	256		15	113	98	16	
300	227	169	161	241		248	346	322	263		21	177	161	22	
450	228	166	160	235		252	362	322	278		24	196	162	43	
600	226	166	159	234		256	371	320	292		30	205	161	58	
750	229	165	158	235	468	262	372	319	306	465	33	207	161	71	-3
900	228	164	157	235	462	268	376	335	321	462	40	212	178	86	0
1050	231	164	157	236	461	272	378	344	320	464	41	214	187	84	3
1200	234	166	159	238	461	272	374	345	336	473	38	208	186	98	12
1350	234	167	161	240	465	269	383	346	328	472	35	216	185	88	7
1500	233	170	164	244	469	267	380	344	328	475	34	210	180	84	6
1650	234	173	166	248	470	263	373	334	327	474	29	200	168	79	4
1800	237	176	170	252	473	258	346	307	322	475	21	170	137	70	2
1950		174	171	258	480		208	296	318	482		34	125	60	2
2100			158	262	486			195	271	488			37	9	2
2250				269					290					21	
2400				275					290					15	
2550				281					289					8	
2700				291					300					9	
2850				304					309					5	
3000				316					319					3	

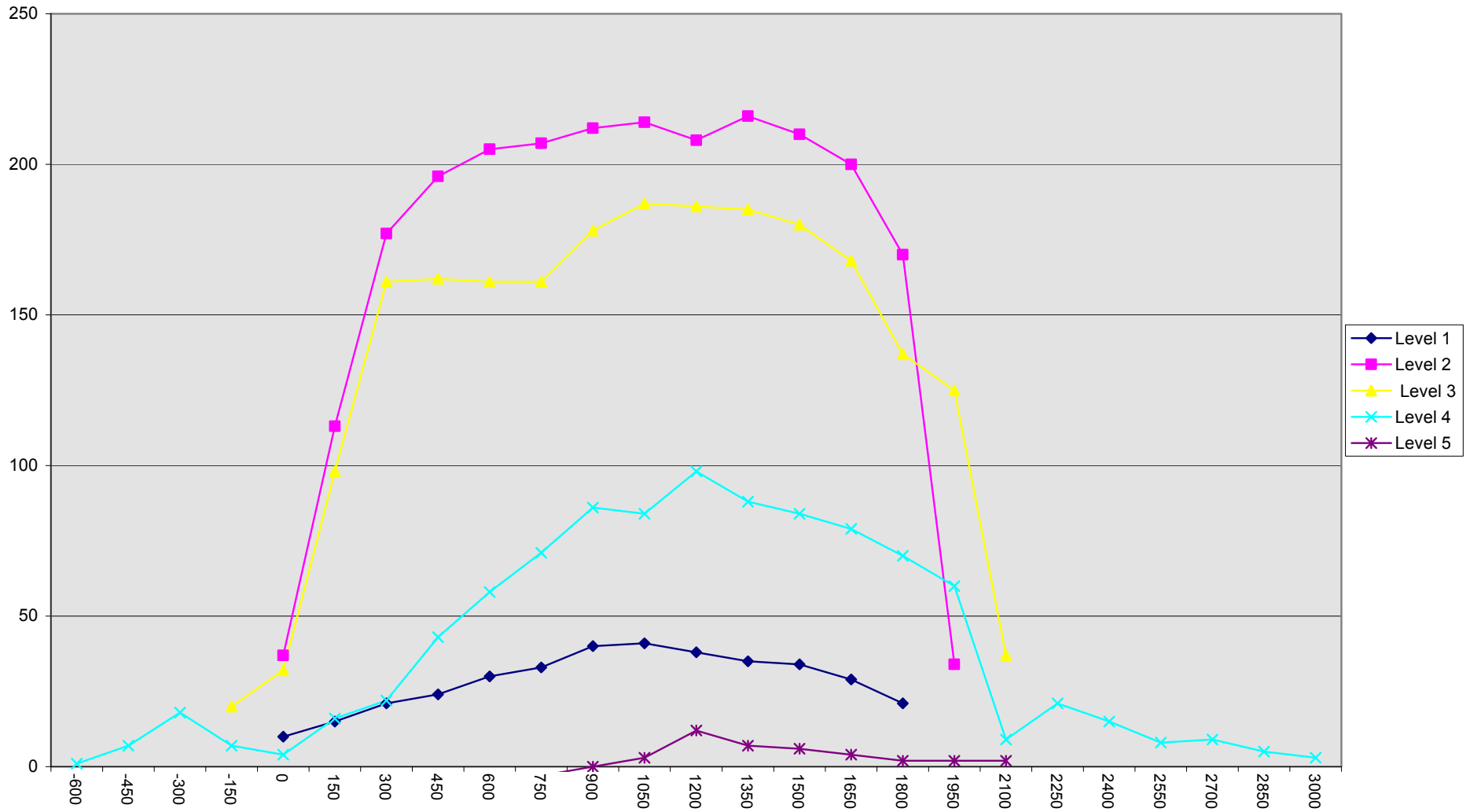
Reference plane is parallel to test vehicle longitudinal centerline.

Given dimensions = Reference plane to car body

DATA SHEET NO. 11... (continued)
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2009 Mercury Sable
Test Program: FMVSS 214

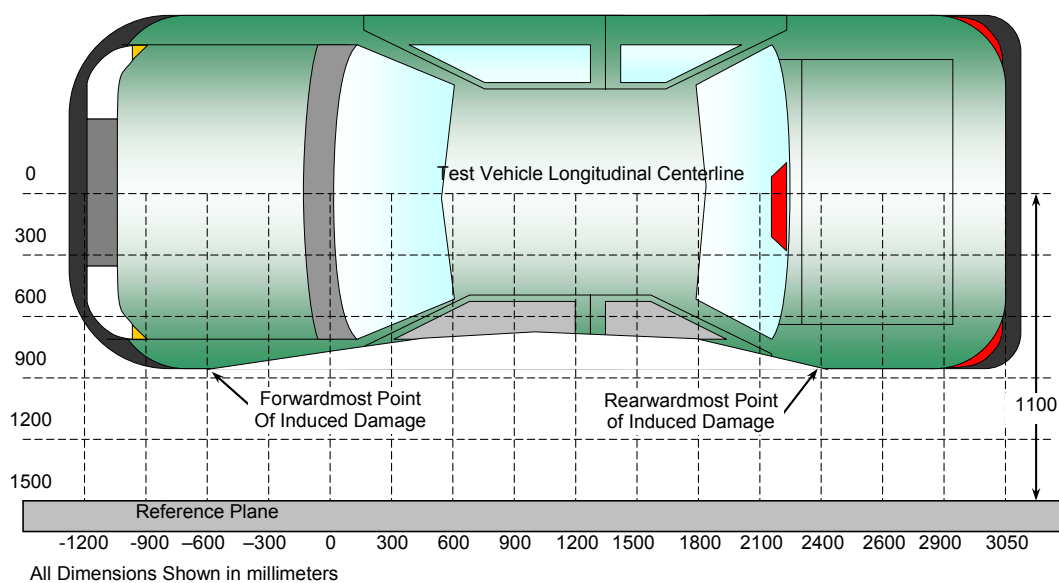
NHTSA No. C90207
Test Date: 4/01/2009



DATA SHEET NO. 12 **VEHICLE DAMAGE PROFILE DISTANCES**

Test Vehicle: 2009 Mercury Sable
 Test Program: FMVSS 214

NHTSA No. C90207
 Test Date: 4/01/2009



TOP VIEW

DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1	3000	4	316	319	3
2	2275	4	270	292	22
3	1540	2	233	283	50
4	810	3	157	280	123
5	110	2	170	253	83
6	-600	4	259	260	1

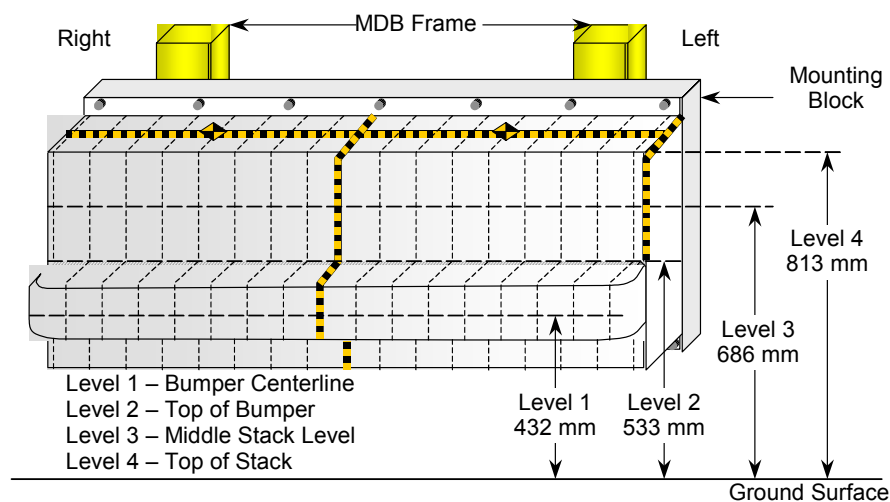
Reference plane is parallel to test vehicle longitudinal centerline.
 Given dimensions = Reference plane to car body.

DATA SHEET NO. 13

DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2009 Mercury Sable
Test Program: FMVSS 214

NHTSA No. C90207
Test Date: 4/01/2009



DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center								C _L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
1	146	137	129	122	121	122	122	116	112	107	108	107	107	109	114	130	154
2	75	67	63	61	61	57	53	53	53	54	53	54	55	57	59	74	88
3	41	24	21	10	9	15	38	41	19	13	15	18	22	36	41	58	89
4	14	19	16	12	13	24	51	37	24	22	21	17	24	38	52	84	126

All Dimensions in mm

DATA SHEET NO. 14
VEHICLE AND MDB ACCELEROMETER SENSOR DATA

Test Vehicle: 2009 Mercury Sable
Test Program: FMVSS 214

NHTSA No. C90207
Test Date: 4/01/2009

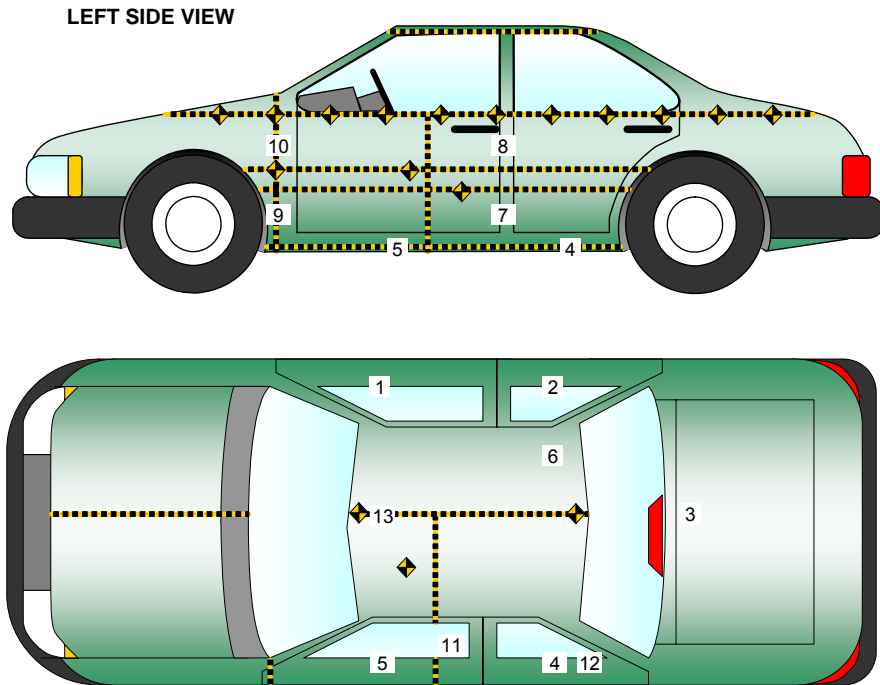
Description	Maximum Values (g's)			
	Positive	Time, ms	Negative	Time, ms
Right Front Sill X	4.1	28.4	-4.5	42.9
Right Front Sill Y	30.1	14.7	-2.3	90.2
Right Front Sill Z	6.3	32.6	-4.9	7.7
Right Front Sill Resultant	30.3	14.7		
Right Rear Sill X	4.3	28.4	-4.2	42.8
Right Rear Sill Y	35.7	15.3	-5.2	19.9
Right Rear Sill Z	4.7	33.5	-8.1	16.3
Right Rear Sill Resultant	36.4	15.3		
Floorpan @ Rear Axle X	9.0	50.9	-16.7	15.7
Floorpan @ Rear Axle Y	23.1	15.1	-3.5	68.5
Floorpan @ Rear Axle Z	27.2	41.9	-25.5	17.8
Floorpan @ Rear Axle Resultant	35.0	42.0		
Left Front Sill Y	43.8	3.3	-23.0	7.4
Left Rear Sill Y	36.9	13.3	-7.1	1.2
Left Lower B-Post Y	(1)	(1)	(1)	(1)
Left Mid B-Post Y	153.2	4.2	-46.4	17.2
Left Lower A-Post Y	27.0	1.2	-6.5	50.9
Left Mid A-Post Y	29.3	0.5	-12.1	16.5
Vehicle CG X	3.2	7.7	-8.5	35.0
Vehicle CG Y	(1)	(1)	(1)	(1)
Vehicle CG Z	8.5	22.7	-9.5	3.0
Vehicle CG Resultant	(1)	(1)		
Driver Seat Track Y	51.5	11.5	-48.8	67.4
RR Occupant Compartment Y	28.8	13.8	-1.8	87.0
MDB CG X	1.0	88.6	-18.7	43.5
MDB CG Y	7.8	43.2	-3.2	64.0
MDB CG Z	20.5	39.8	-24.0	23.5
MDB CG Resultant	29.1	23.5		
MDB Rear X	1.5	100.1	-22.6	36.1
MDB Rear Y	4.7	39.6	-2.5	84.5

⁽¹⁾ No valid data collected

DATA SHEET NO. 15
VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2009 Mercury Sable
 Test Program: FMVSS 214

NHTSA No. C90207
 Test Date: 4/01/2009



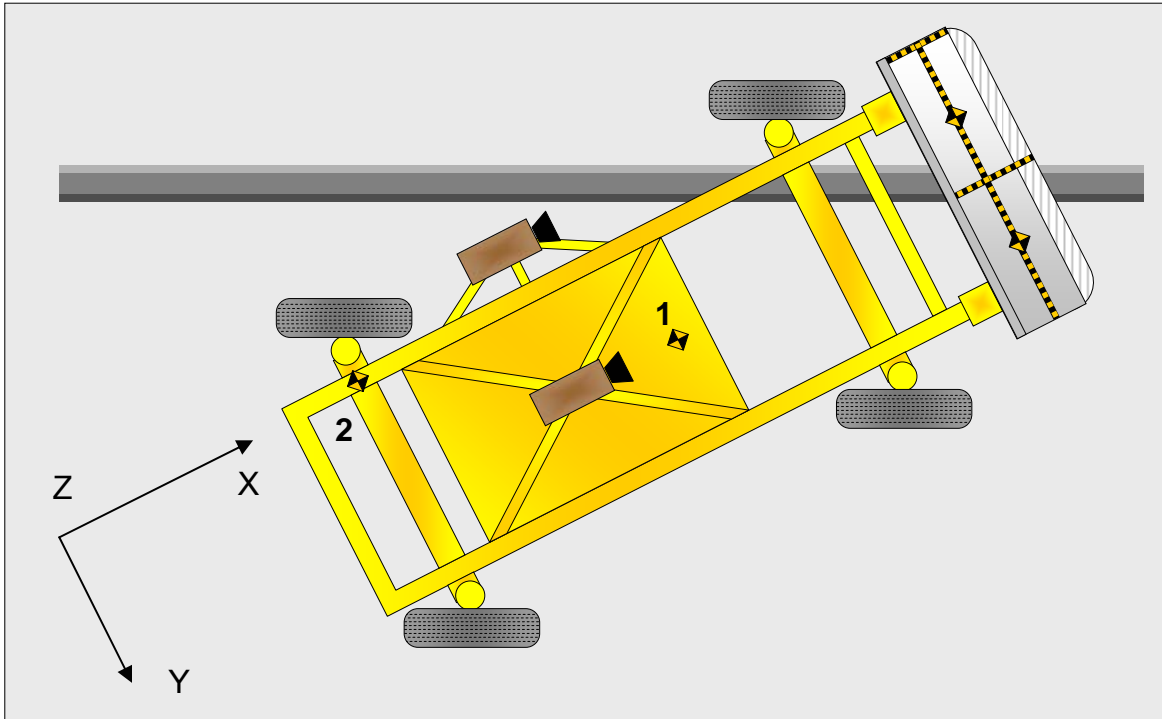
Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Right Sill at Front Seat	2772	755	-195
2	Right Sill at Rear Seat	1629	760	-216
3	Rear Floorpan Above Axle	1032	0	-458
4	Left Sill at Rear Door	1686	-760	-207
5	Left Sill at Front Door	2792	-755	-206
6	Rear Occupant Compartment	2086	365	-380
7	Left Lower B-Post	2438	-750	-625
8	Left Middle B-Post	2419	-736	-820
9	Left Lower A-Post	3467	-725	-480
10	Left Middle A-Post	3468	-820	-804
11	Front Seat Track	2566	-545	-387
12	Rear Seat Track			
13	Vehicle CG	2982	0	-401

Reference Points X - Test Vehicle Rear Bumper (+ forward)
 Y - Test Vehicle Centerline (+ to right)
 Z - Ground Plane (+ down)

DATA SHEET NO. 16
MDB ACCELEROMETER LOCATIONS

Test Vehicle: 2009 Mercury Sable
 Test Program: FMVSS 214

NHTSA No. C90207
 Test Date: 4/01/2009



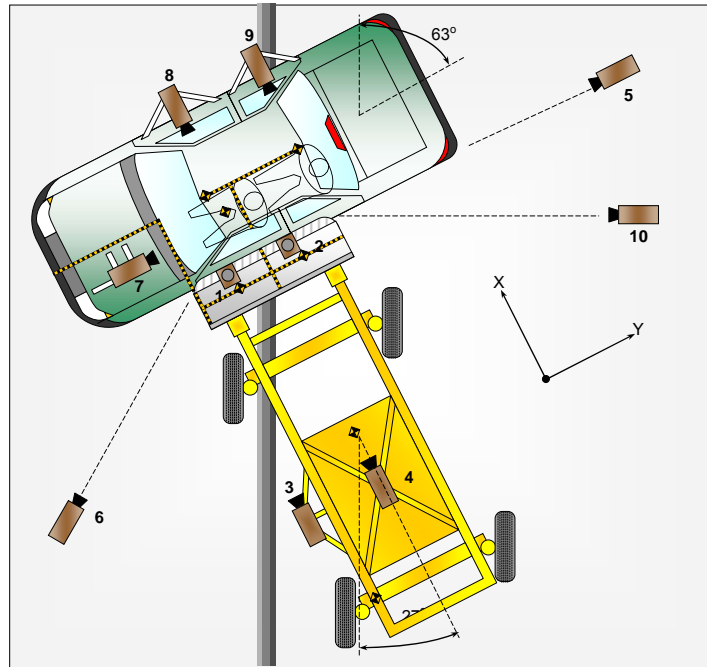
Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	MDB CG	-1092	0	-483
2	MDB Rear	-2591	-625	-622

Reference Points X - MDB Front Axle (+ forward)
 Y - MDB Centerline (+ to right)
 Z - Ground Plane (+ down)

DATA SHEET NO. 17
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2009 Mercury Sable
 Test Program: FMVSS 214

NHTSA No. C90207
 Test Date: 4/01/2009



No.	Camera View	Location (mm)			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Overhead Close-up	120	0	5050	50	1000
2	Overhead Overall	-355	0	5050	14	1000
3	MDB Onboard, Impact Point Close-up				50	1000
4	MDB Onboard, Centerline of Impact				16	1000
5	Right Side, Ground Level, Overall	1025	4910	1135	24	1000
6	Left Side, Ground Level, Overall	1155	-5010	1215	24	1000
7	Vehicle Onboard Front SID, Front				12.5	1000
8	Vehicle Onboard Front SID, Side				8	1000
9	Vehicle Onboard Rear SID, Side				8	1000
10	Real Time Coverage				13	24

Reference Points X - Impact Line
 Y - MDB Left Edge Impact Point
 Z - Ground Plane

DATA SHEET NO. 18
SUMMARY OF FMVSS 301 DATA

Test Vehicle: 2009 Mercury Sable
 Test Program: FMVSS 214

NHTSA No. C90207
 Test Date: 4/01/2009

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

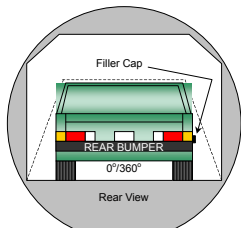
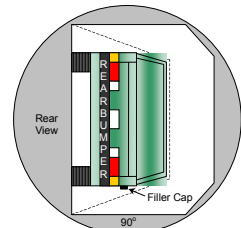
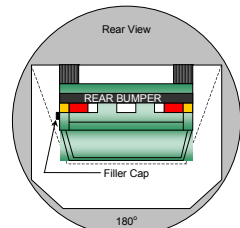
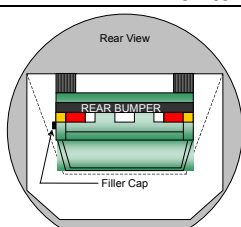
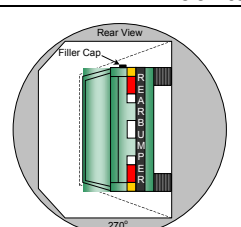
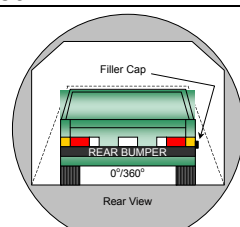
Temperature at Time of Impact: 21° C

Test Time: 10:15 am

Stoddard Solvent Spillage Measurements

- A. From impact until vehicle motion ceases: 0 oz.
 (Maximum Allowable = 1 ounce)
- B. For the 5 minute period after motion ceases: None
 (Maximum allowable = 5 ounces)
- C. For the following 25 minutes: None
 (Maximum allowable = 1 oz. /minute)
- D. Spillage Details: None

FMVSS 301 STATIC ROLLOVER DATA

			<p>1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.</p> <p>2. The position hold time at each position is 300 seconds (minimum).</p> <p>3. Details of Stoddard Solvent spillage locations: None</p>
0° to 90° 90° to 180°			
			
180° to 270° 270° to 360°			

Test Phase	Rotation Time (sec.)	Hold Time (sec.)	Spillage Collection Time (min)	Spillage (oz.)
0° to 90°	122	300	First 5	0
90° to 180°	116	300	First 5	0
180° to 270°	104	300	First 5	0
270° to 360°	121	300	First 5	0

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PHOTOGRAPHS

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A-1.



Left Front $\frac{3}{4}$ View, As Received

A-2.



Right Rear $\frac{3}{4}$ View, As Received

MFD. BY FORD MOTOR CO.

DATE: 01/09

GVWR: 2250KG/4960LB

FRONT GAWR: 1225KG/2700LB

REAR GAWR: 1066KG/2350LB

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY, BUMPER, AND THEFT PREVENTION STANDARDS
IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

VIN: 1MEHM40W99G629150 TYPE: Passenger Car

MAXIMUM LOAD = OCCUPANTS + LUGGAGE = 430KG/950LB

OCCUPANTS = 5 TOTAL; 2 FRONT, 3 REAR

TIRE (FR): P215/60R17

RIMS (FR): 17X7.0J

(RR): P215/60R17

(RR): 17X7.0J

PRESSURE (FR): 220 kPa/ 32 PSI COLD (RR): 220 kPa/ 32 PSI COLD



1MEHM40W99G629150

TRAILER TOWING - SEE OWNER GUIDE

EXT PNT: HT

RC: 42 DSO:

F0078

R0098

INT TR

TP/PS

R

AXLE

TR

SPR

MJ

2

1A

J

BB33

1200901277117

CMC

5U5A-5420472-AA

TIRE AND LOADING INFORMATION

SEATING CAPACITY TOTAL : 5 FRONT: 2 REAR: 3

The combined weight of occupants, and cargo should never exceed **430 kg or 950 lbs.**

TIRE	SIZE	COLD TIRE PRESSURE
FRONT	P215/60R17	220 KPA, 32 PSI
REAR	P215/60R17	220 KPA, 32 PSI
SPARE	T135/90D17	415 KPA, 60 PSI

SEE OWNERS MANUAL FOR ADDITIONAL INFORMATION

1MEHM40W99G629150

5U5A-1532-AA (TLU)

Tire Placard



Pre-Test Front View



Post-Test Front View



Pre-Test Left Front $\frac{3}{4}$ View



Post-Test Left Front $\frac{3}{4}$ View

A-9.



Pre-Test Left Side View

A-10.



Post-Test Left Side View



Pre-Test Left Rear $\frac{3}{4}$ View



Post-Test Left Rear $\frac{3}{4}$ View



Pre-Test Rear View



Post-Test Rear View



Pre-Test Right Rear $\frac{3}{4}$ View



Post-Test Right Rear $\frac{3}{4}$ View

Pre-Test Right Side View



Post-Test Right Side View



Pre-Test Right Front ¾ View



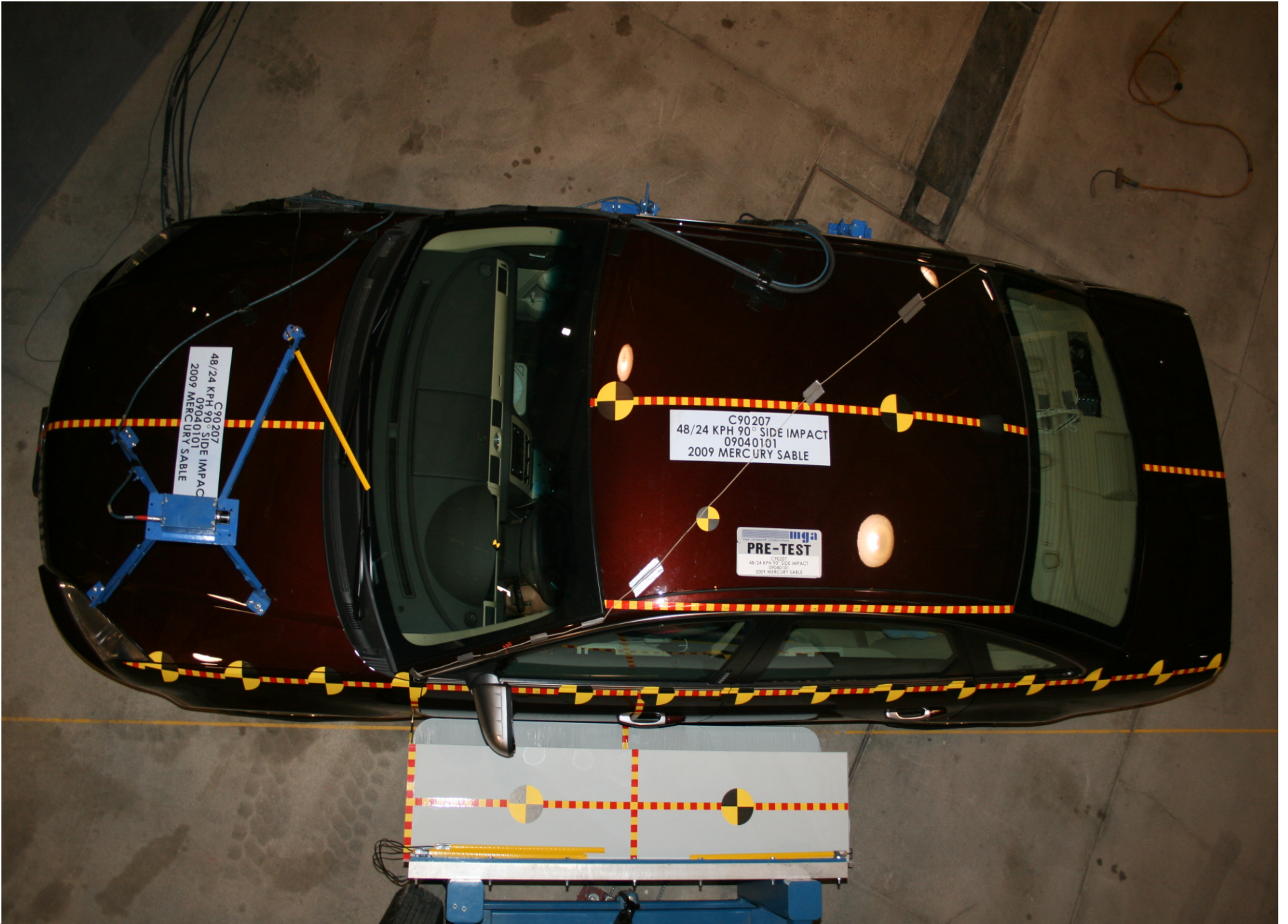
Post-Test Right Front $\frac{3}{4}$ View



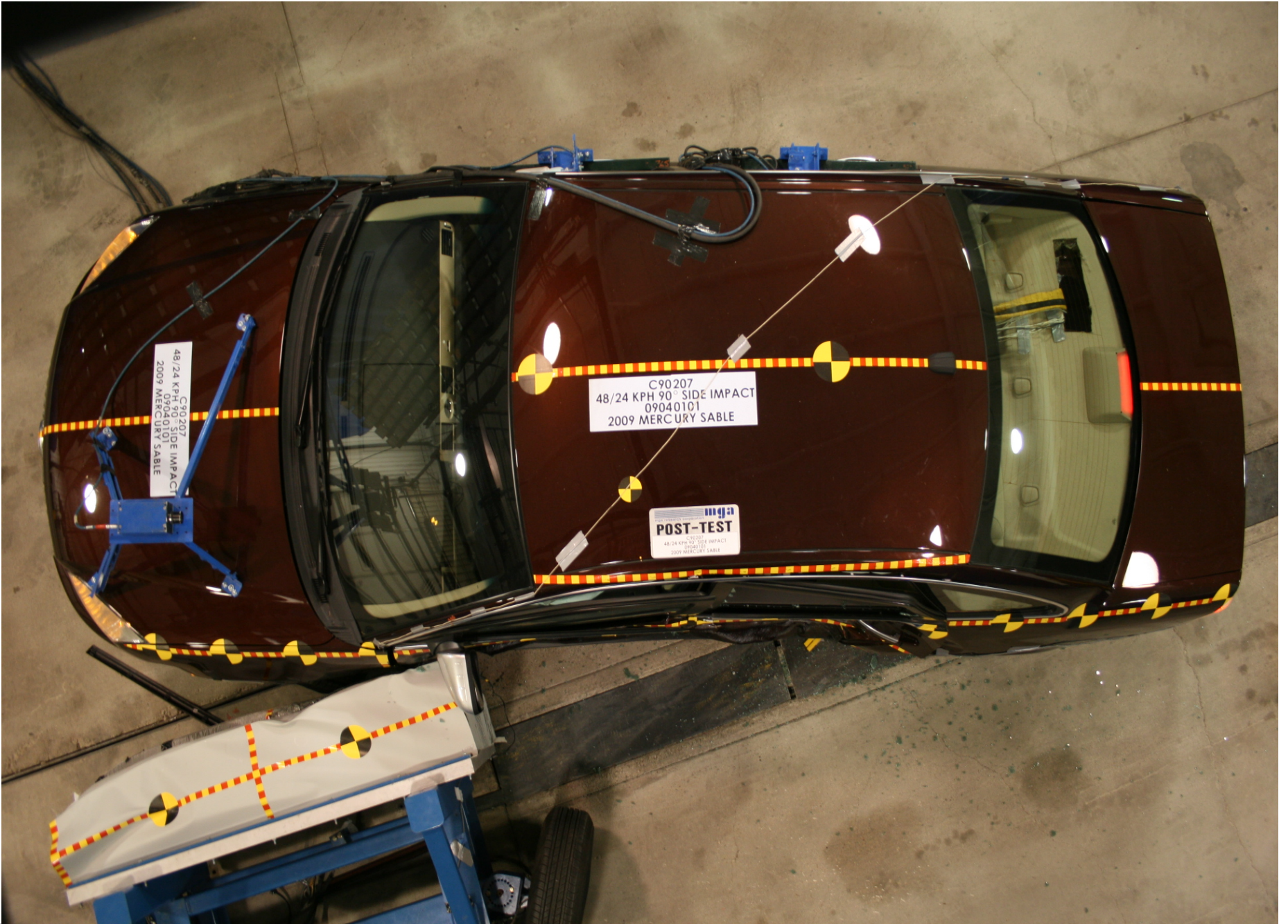
Pre-Test MDB (left side) Positioned Against Vehicle



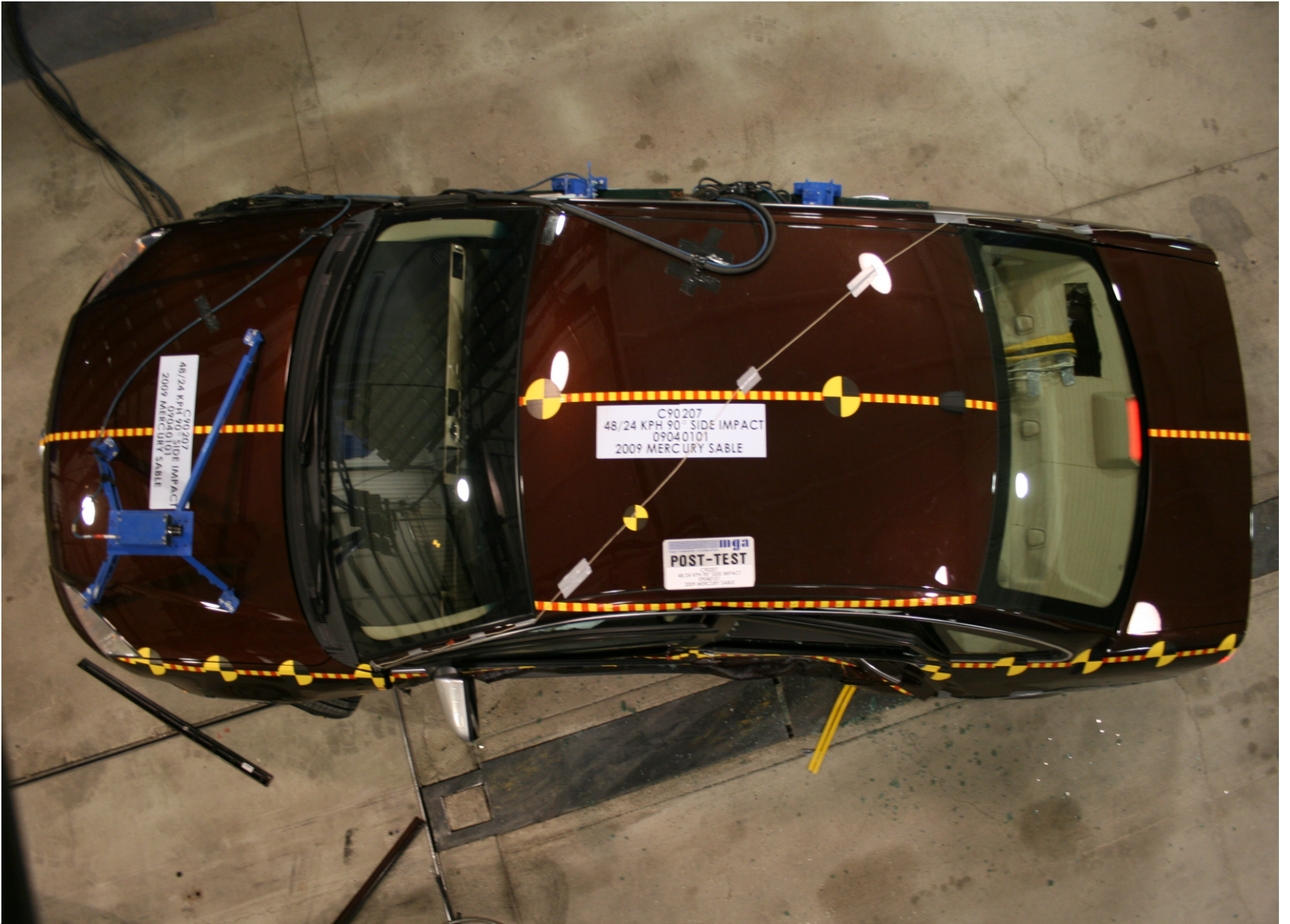
Pre-Test MDB (right side) Positioned Against Vehicle



Pre-Test MDB Positioned Against Vehicle Overhead View



Post-Test MDB and Vehicle Overhead View



Post-Test Vehicle Overhead View



Pre-Test MDB Top View



Post-Test MDB Top View



Pre-Test MDB Front View



Post-Test MDB Front View



Pre-Test MDB Right Side View



Post-Test MDB Right Side View



Pre-Test MDB Left Side View



Post-Test MDB Left Side View



Pre-Test Driver Dummy Right Side View



Post-Test Driver Dummy Right Side View



Pre-Test Driver Dummy Left Side View

A-37.



Post-Test Driver Dummy Left Side View



Pre-Test Driver Dummy Left Side View (Door Open)



Pre-Test Driver Dummy Shoulder and Door Top View



Post-Test Driver Dummy Shoulder and Door Top View



Post-Test Driver Dummy Contact

A-42.



Post-Test Driver Dummy Head Contact (CAB)

A-43.



Post-Test Driver Dummy Head Contact (Headrest)

A-44.



Post-Test Driver Dummy Mid Contact (SAB)

A-45.



Post-Test Driver Dummy Lower Contact



Pre-Test Passenger Dummy Right Side View

A-47.



Post-Test Passenger Dummy Right Side View



Pre-Test Passenger Dummy Left Side View



Post-Test Passenger Dummy Left Side View



Pre-Test Passenger Dummy Left Side View (Door Open)



Pre-Test Passenger Dummy Shoulder and Door Top View

A-52.



Post-Test Passenger Dummy Shoulder and Door Top View



Post-Test Passenger Dummy Contact



Post-Test Passenger Dummy Head Contact (CAB)

A-55.



Post-Test Passenger Dummy Head Contact

A-56.



Post-Test Passenger Dummy Mid Contact

A-57.



Post-Test Passenger Dummy Lower Contact



Pre-Test Fuel Filler Cap



A-59.

Post-Test Fuel Filler Cap



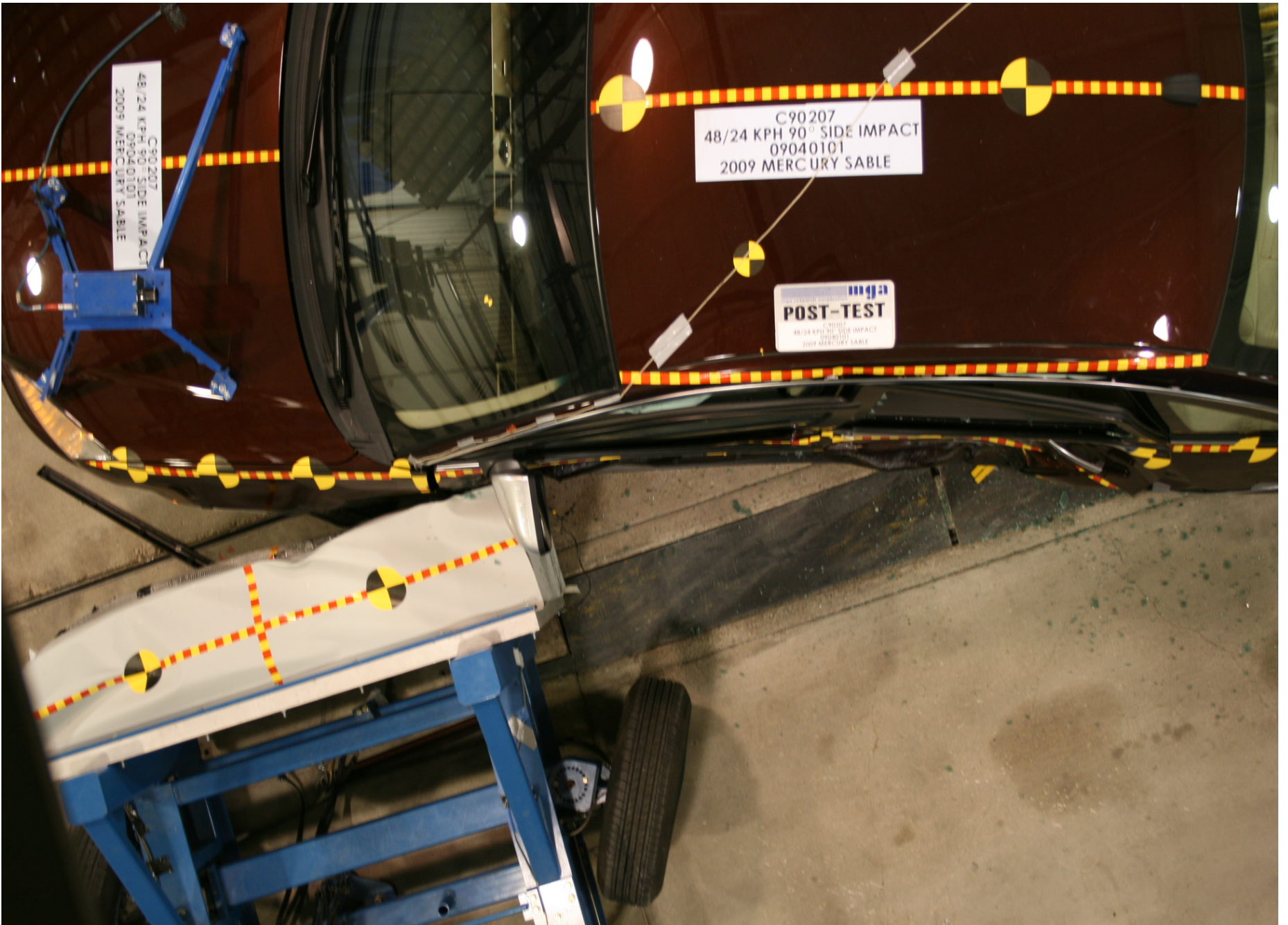
Pre-Test Impact Point on Vehicle



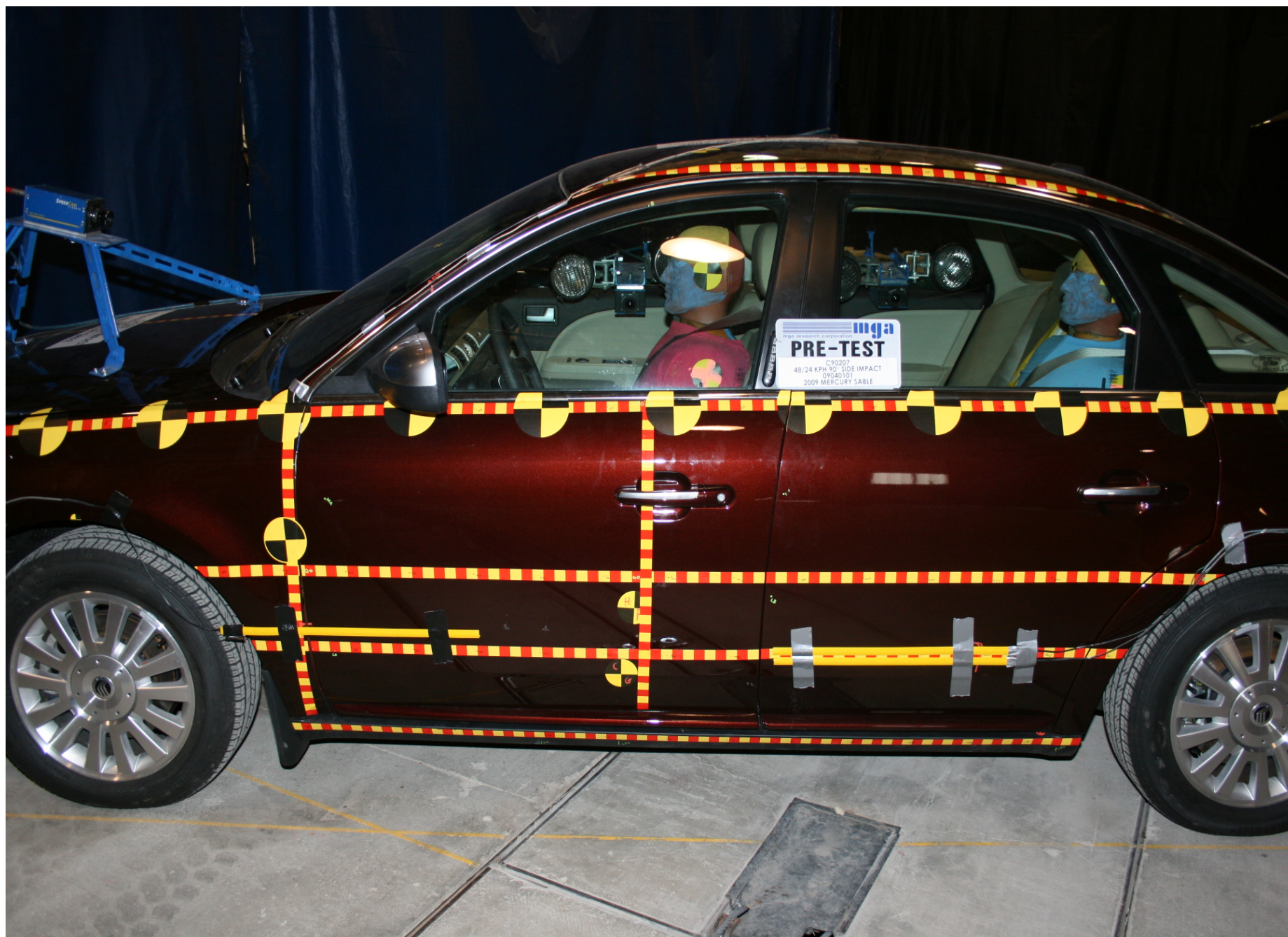
Post-Test Impact Point on Vehicle



Pre-Test Overhead Close Up View



Post-Test Overhead Close Up View



Pre-Test Left Side Close Up View



Post-Test Left Side Close Up View



Impact

A-67.



Rollover 90 Degrees

A-68.



Rollover 180 Degrees



Rollover 270 Degrees

A-70.



Rollover 360 Degrees

APPENDIX B

SID, VEHICLE, AND MDB RESPONSE DATA TRACES

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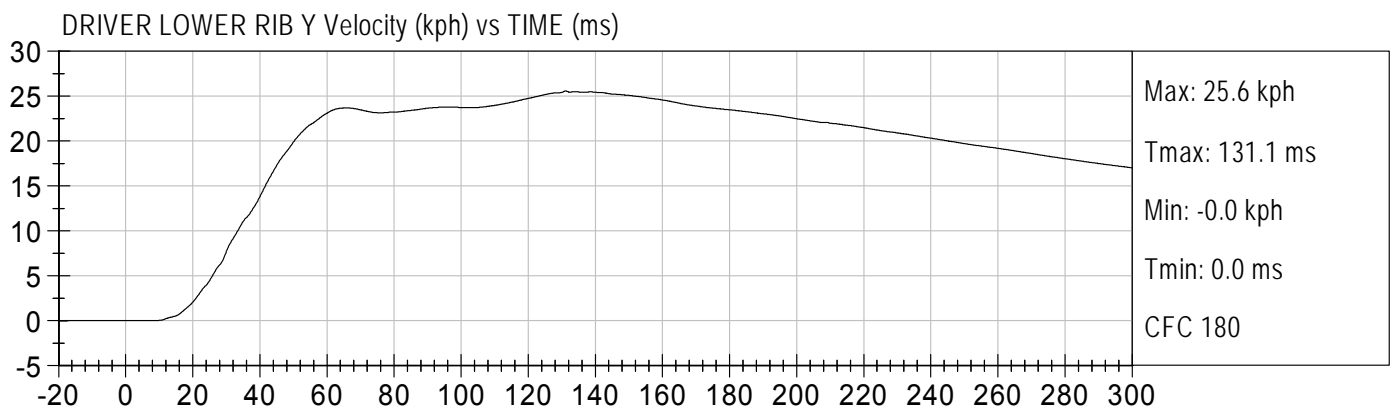
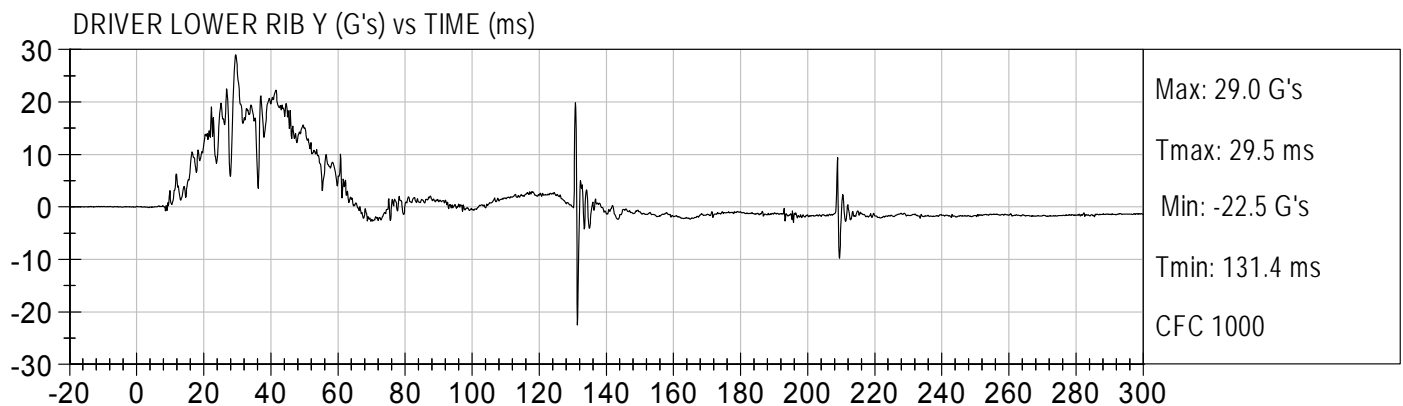
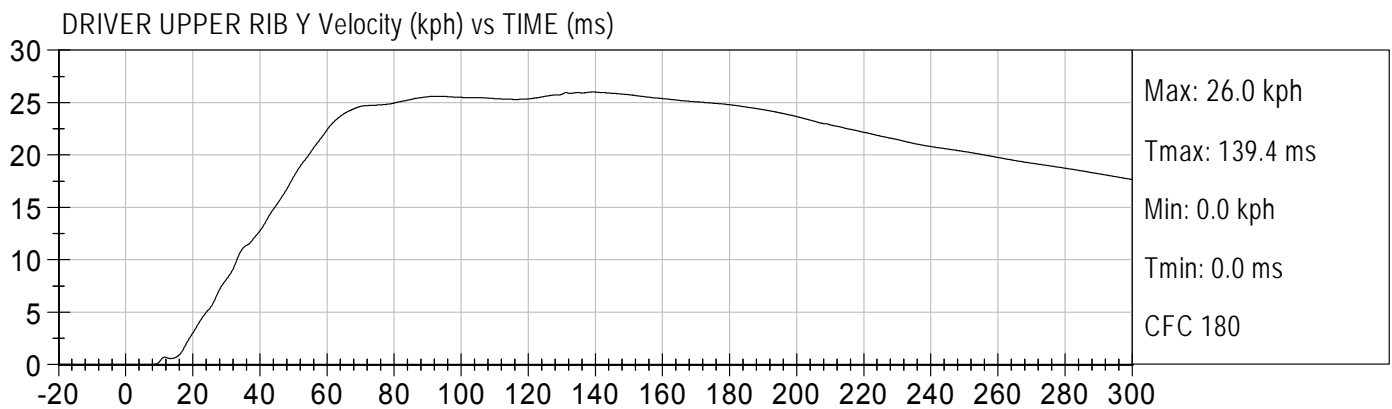
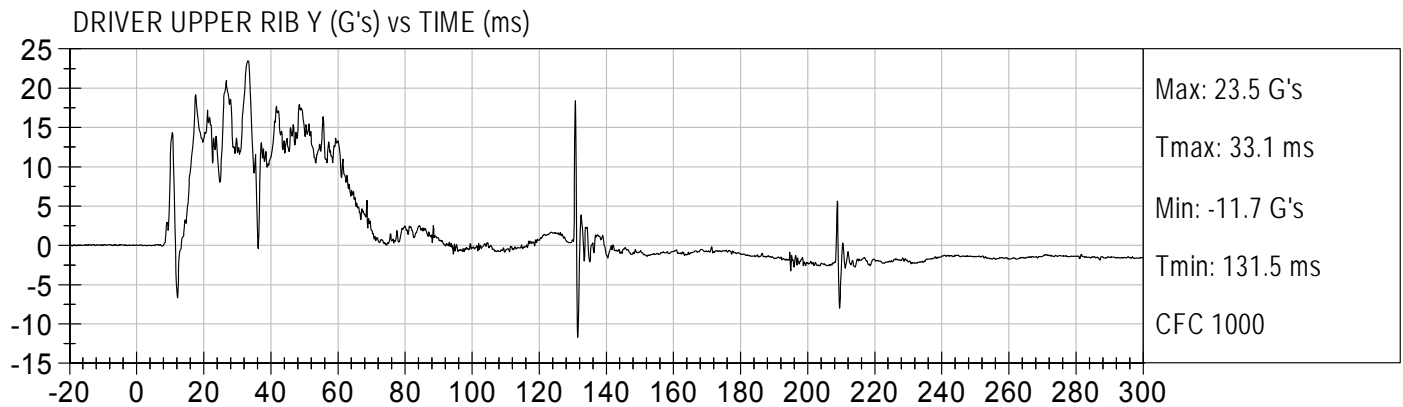
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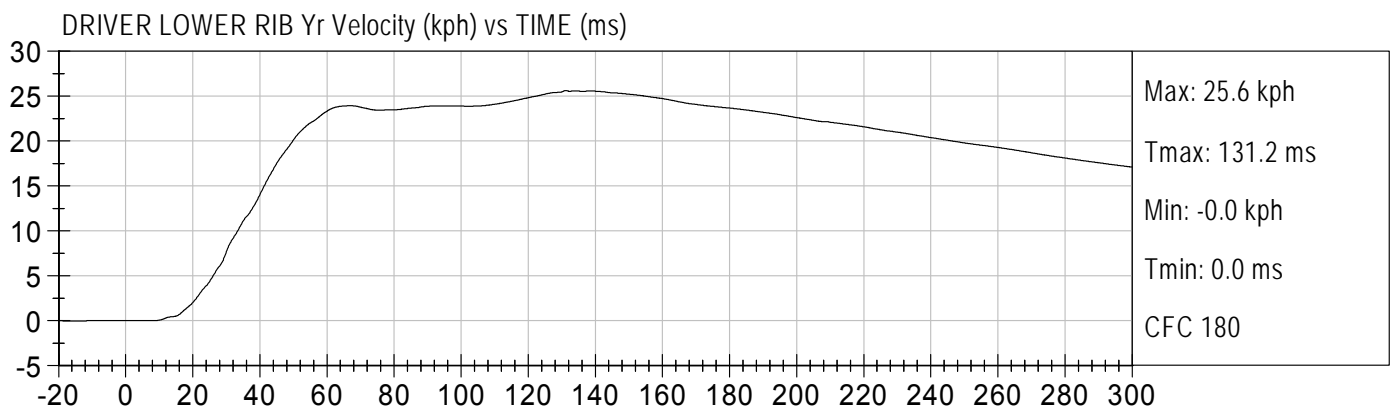
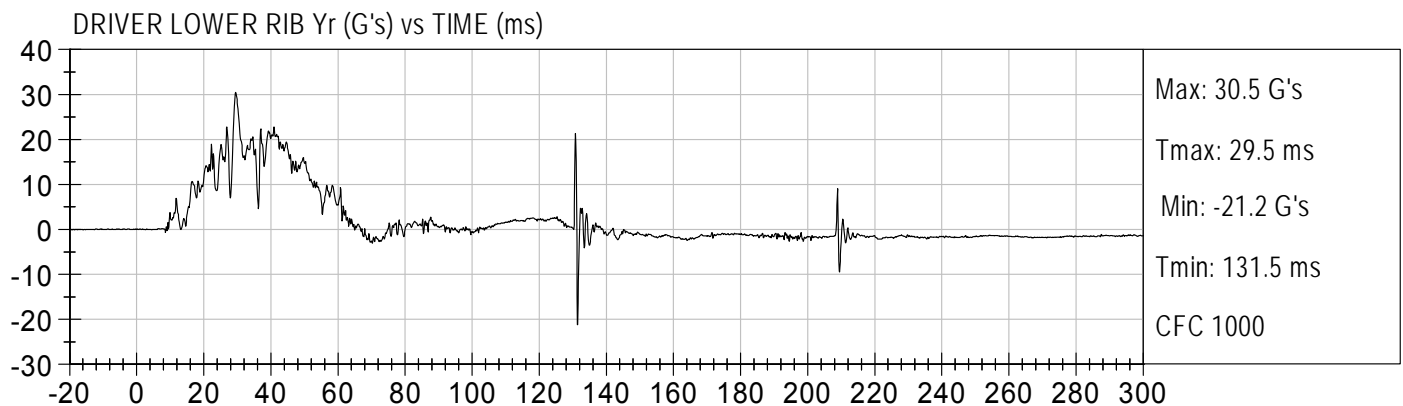
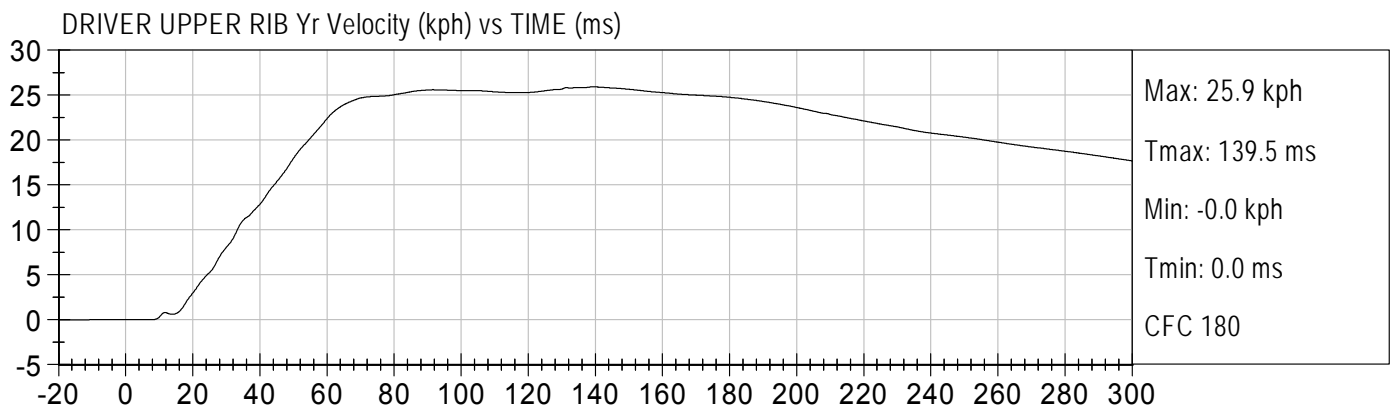
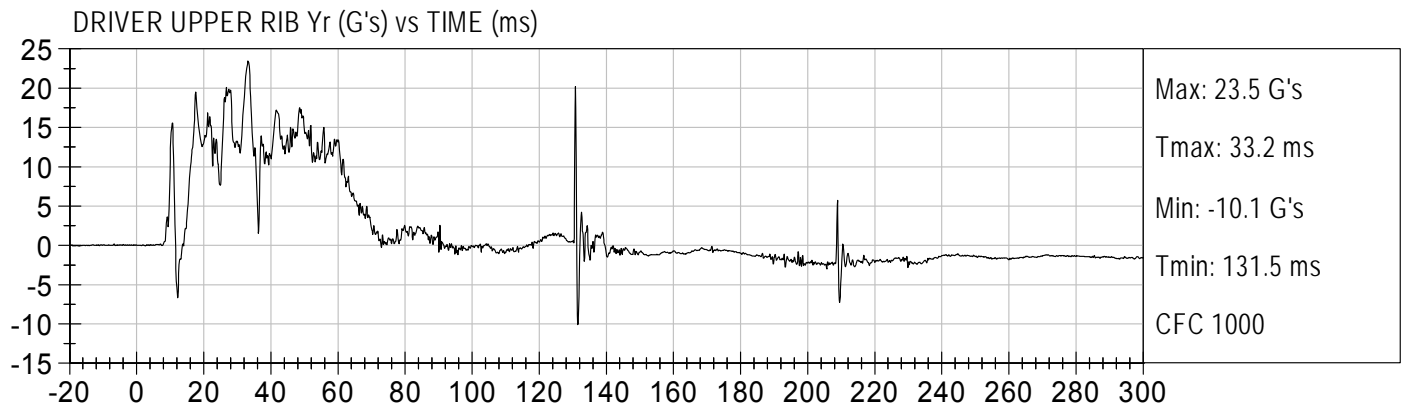
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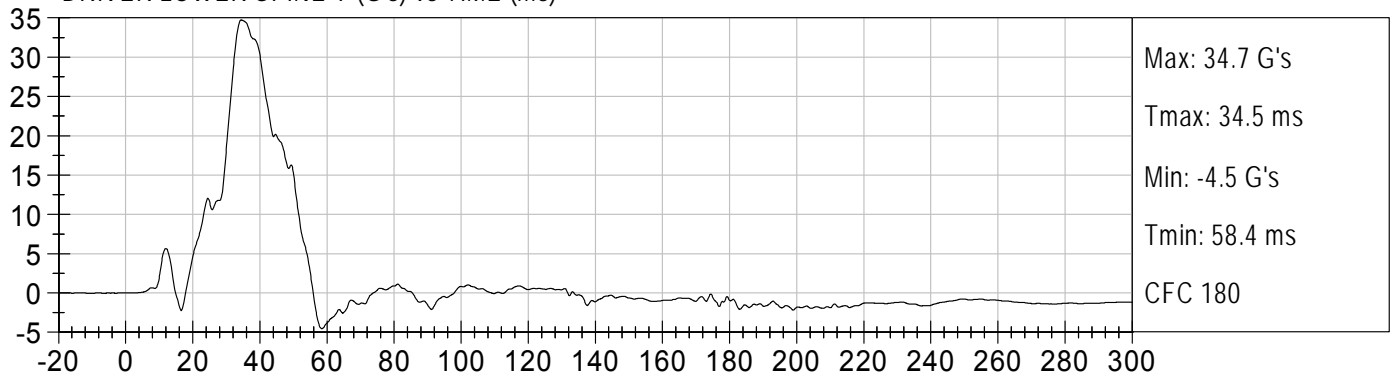




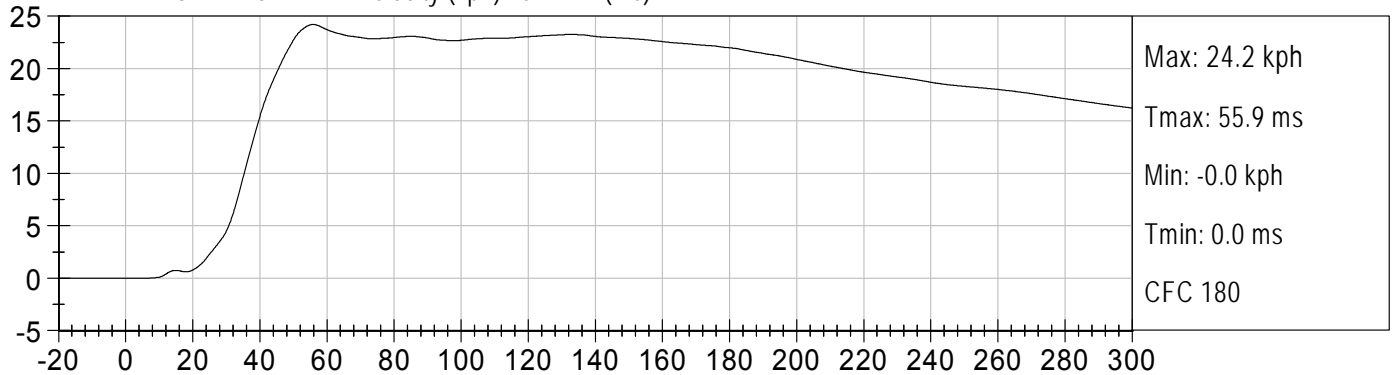
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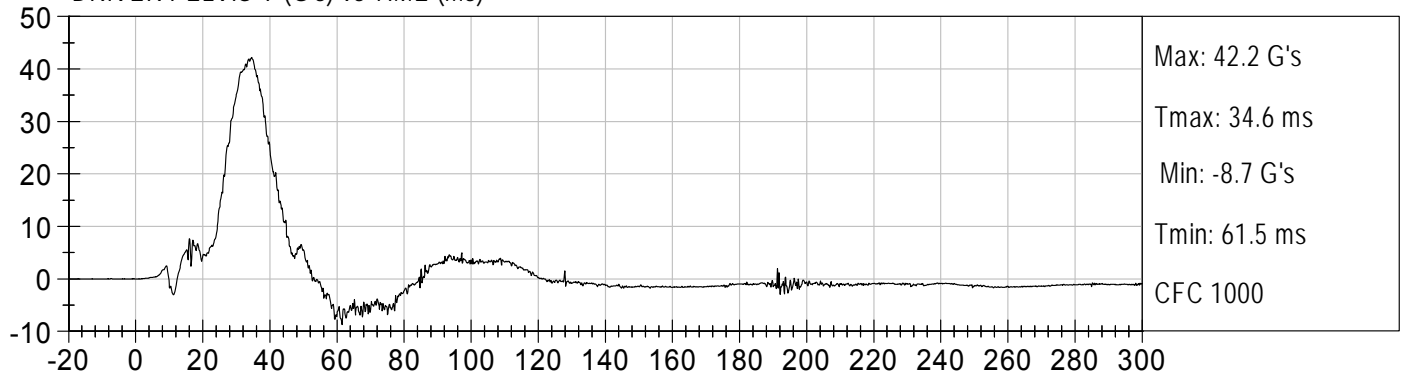
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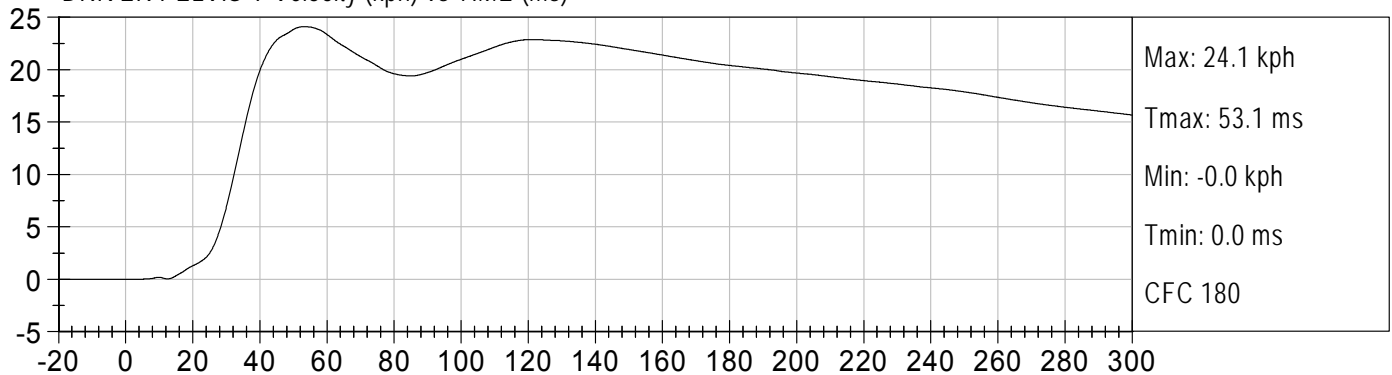
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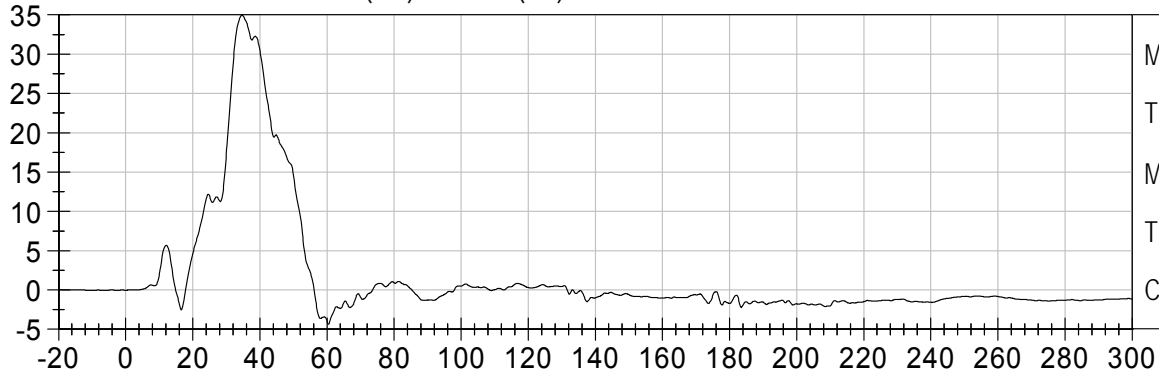




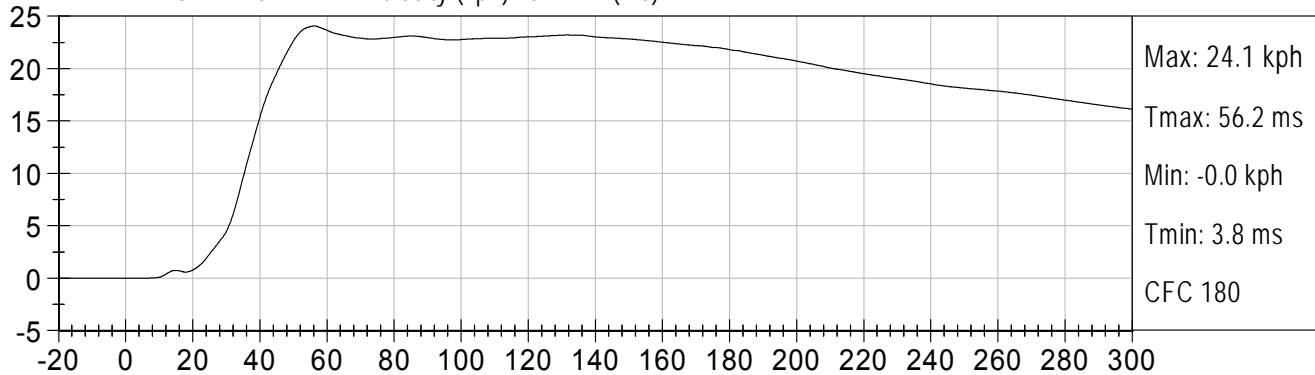
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2009 MERCURY SABLE

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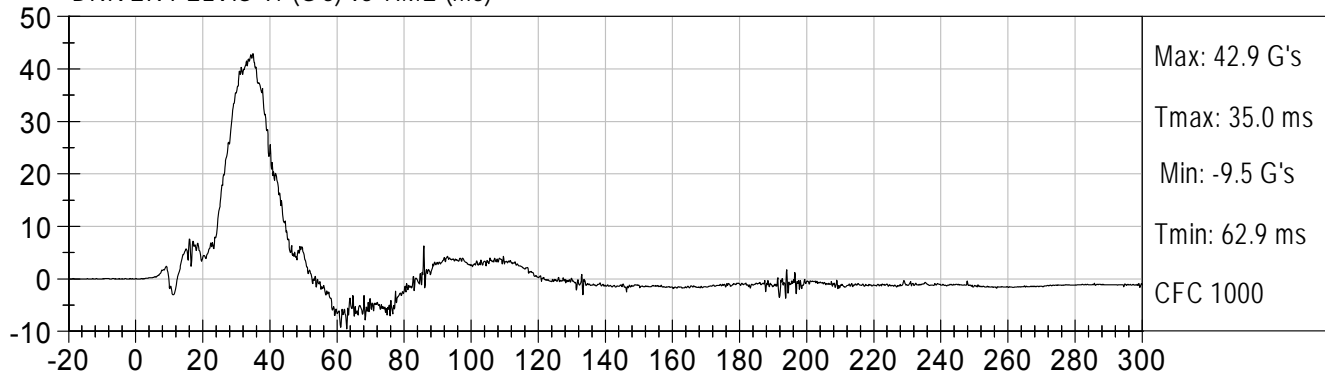
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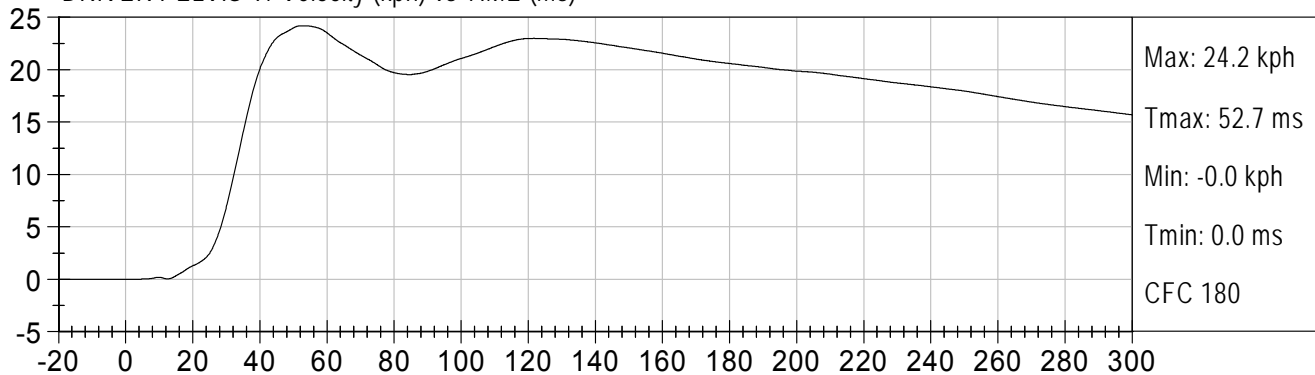
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DRIVER PELVIS Yr (G's) vs TIME (ms)



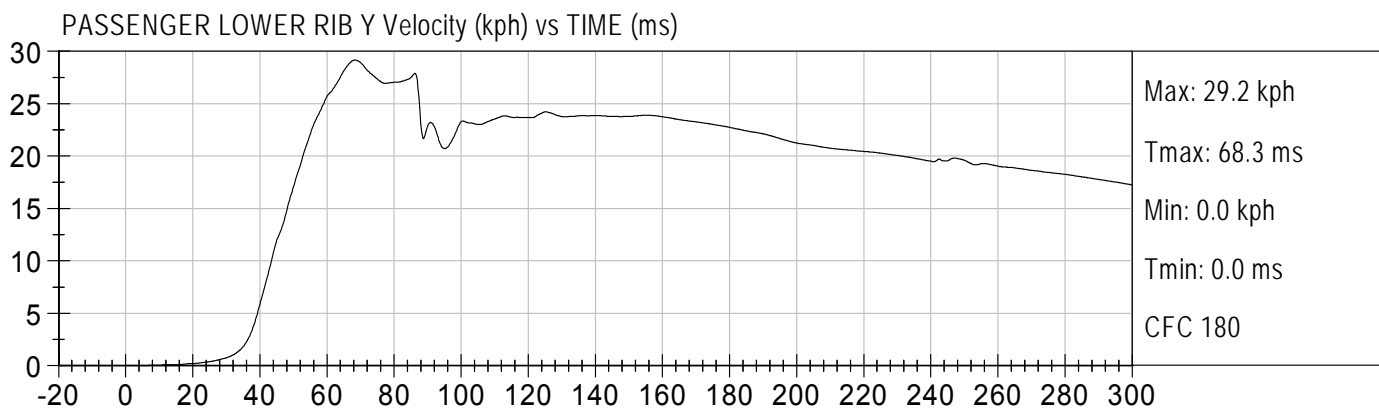
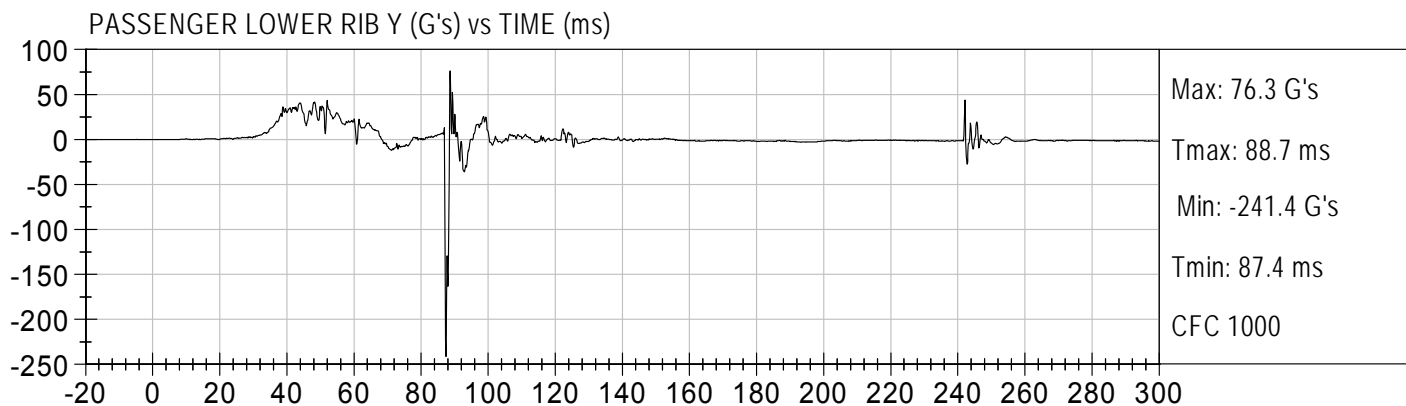
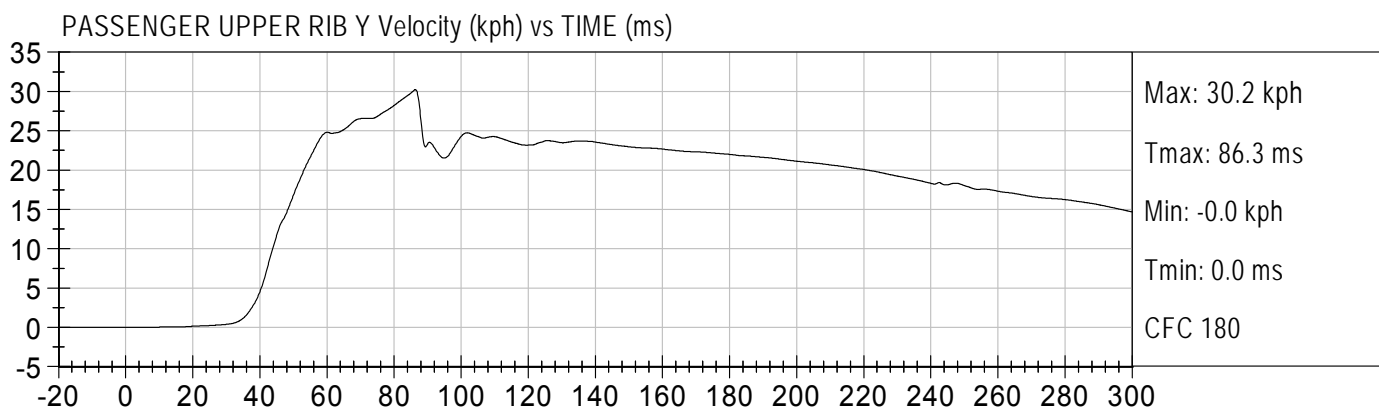
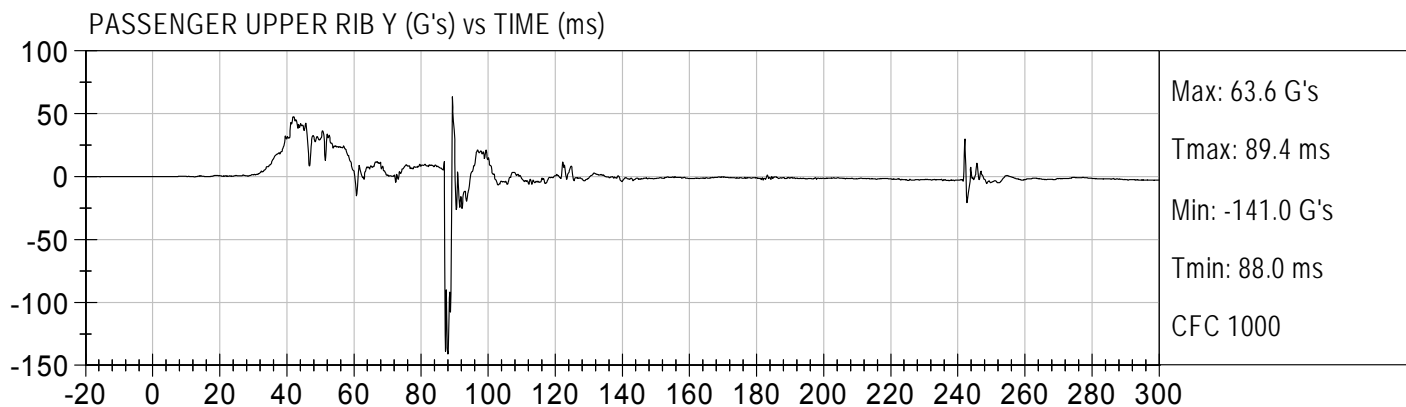
DRIVER PELVIS Yr Velocity (kph) vs TIME (ms)





FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

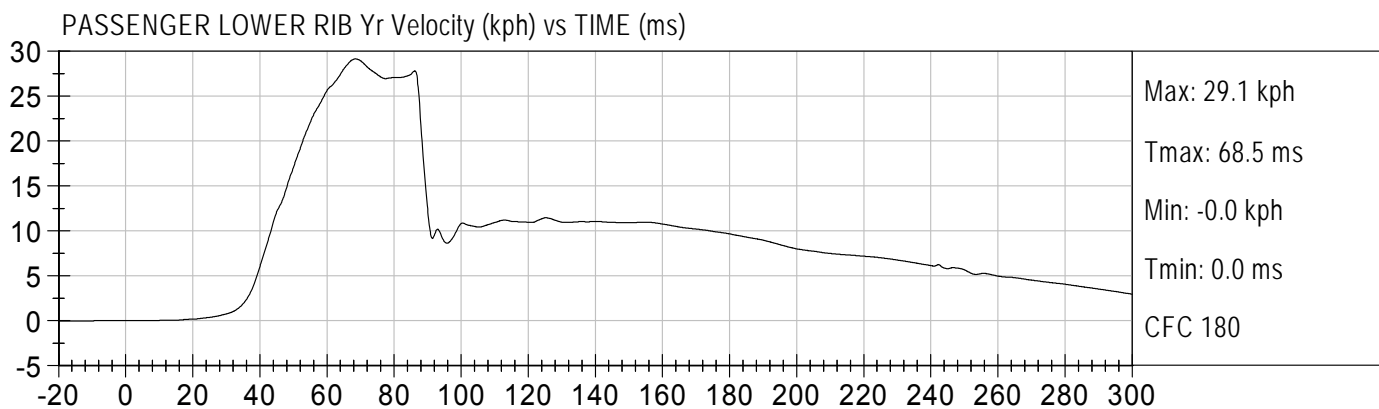
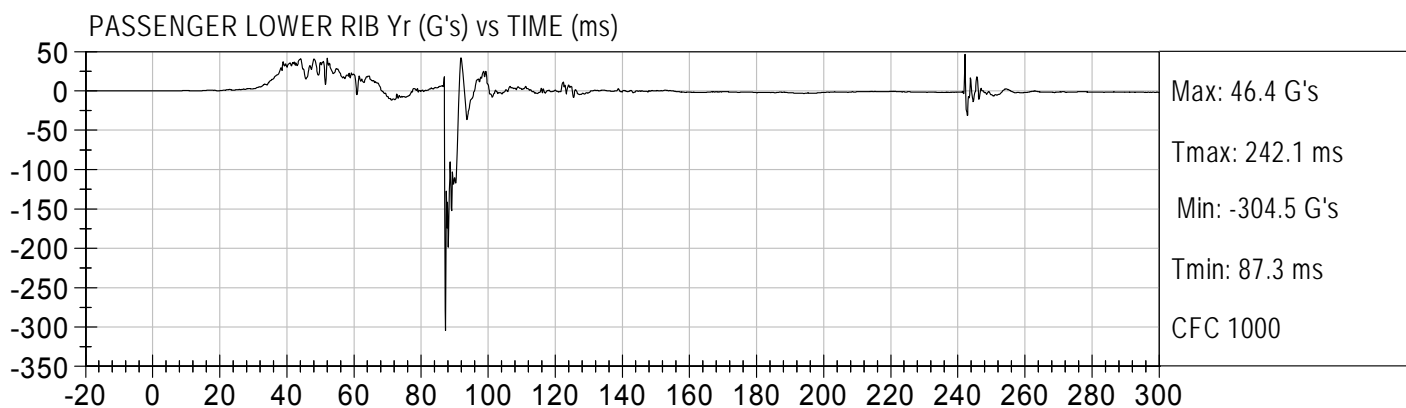
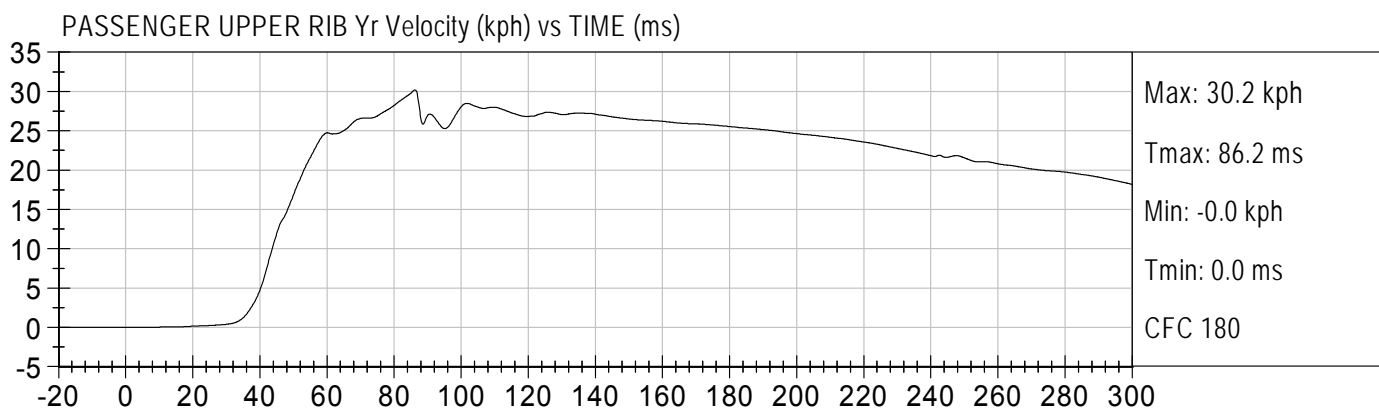
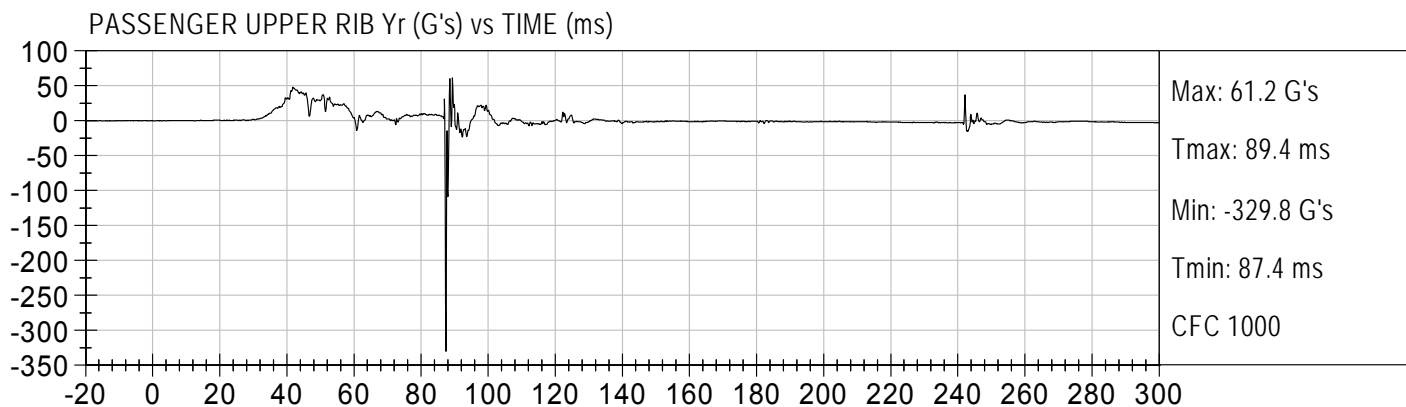
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Speed: 32.9 mph (52.9 km/h)





FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

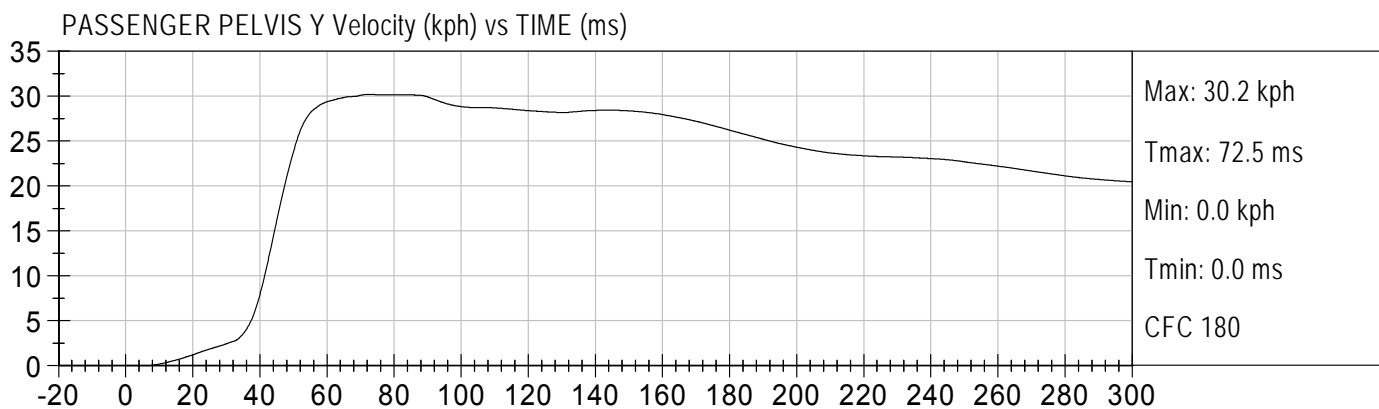
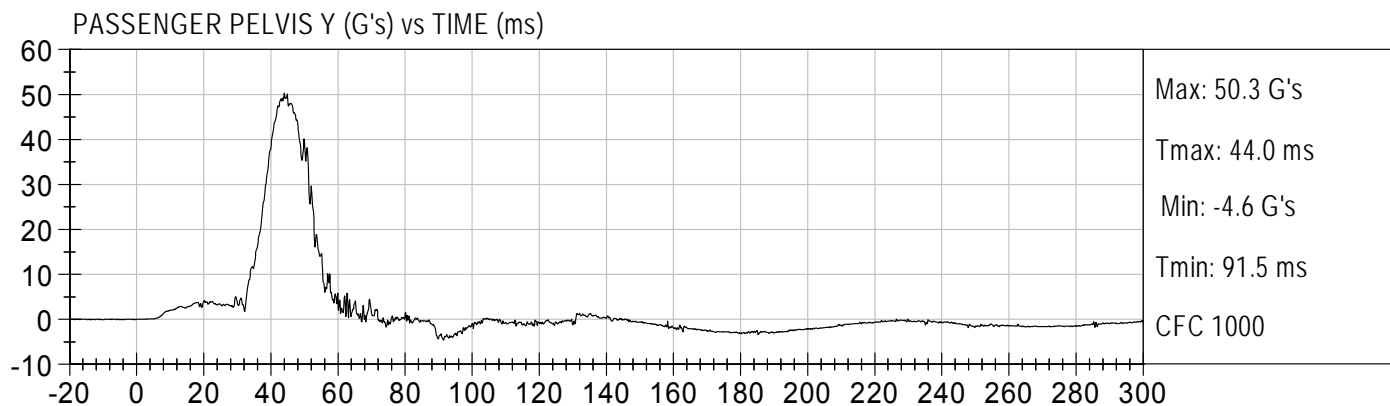
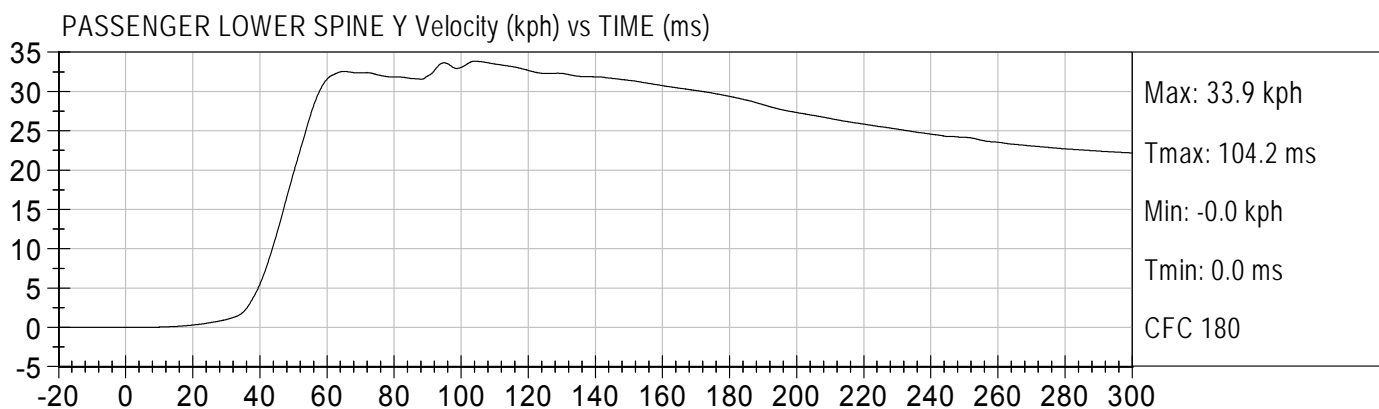
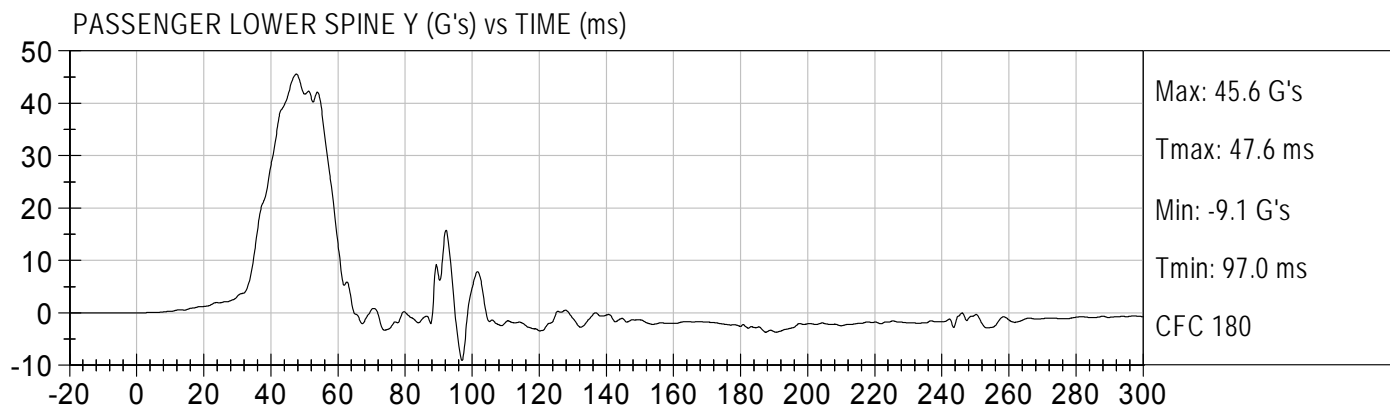
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FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

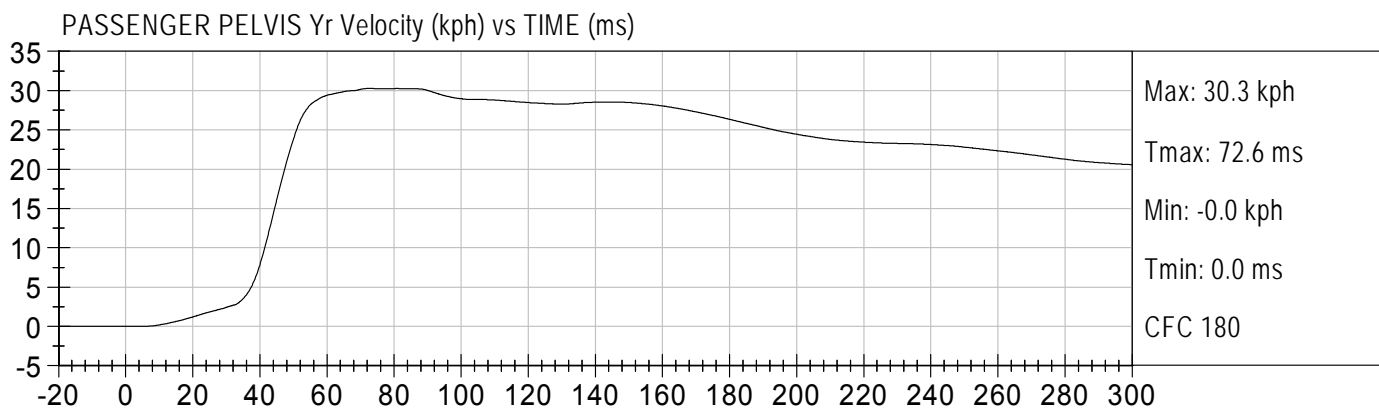
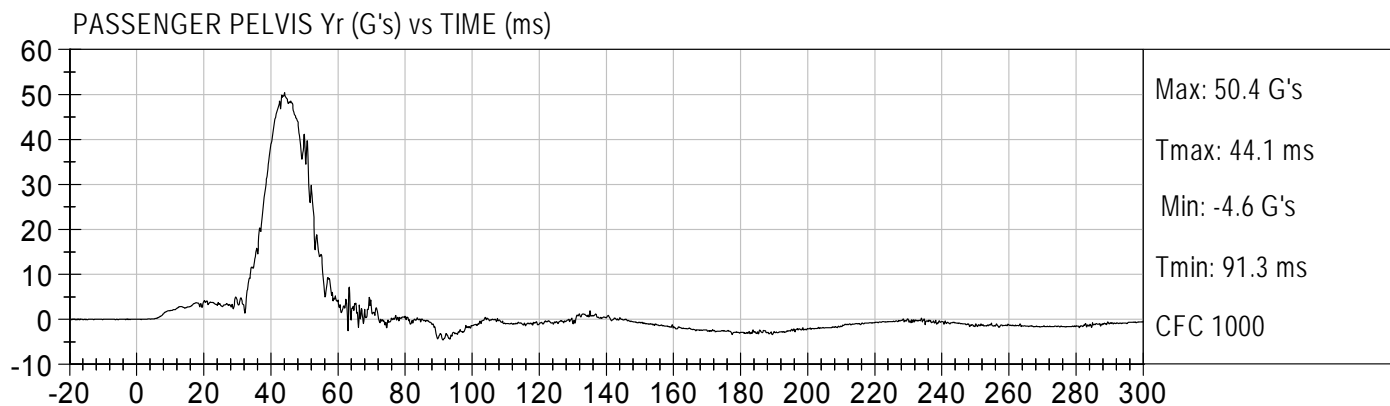
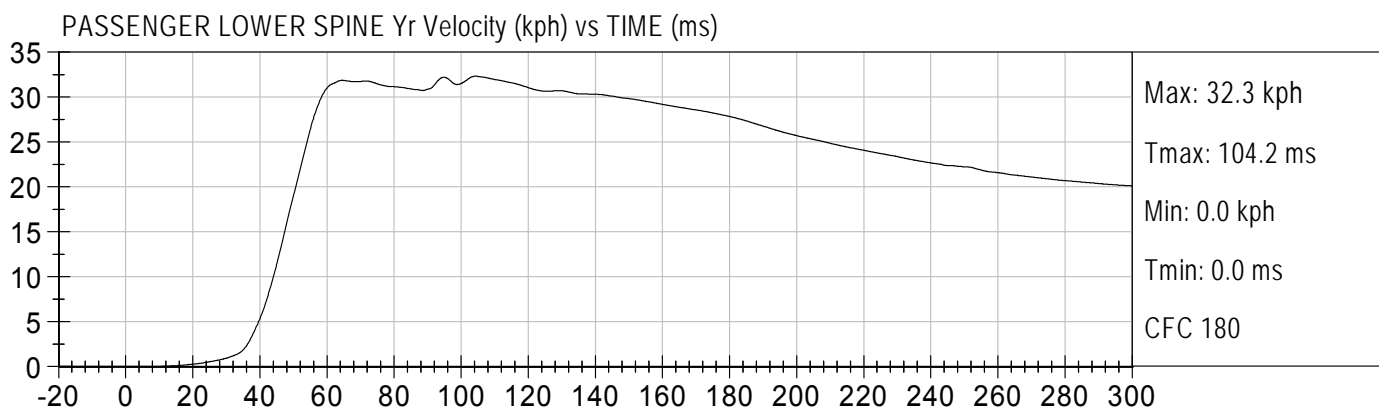
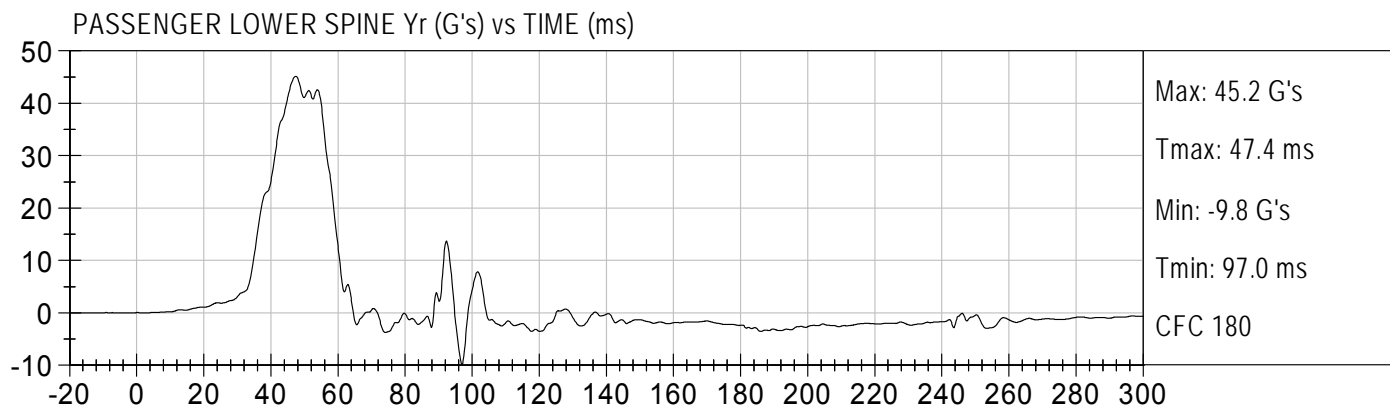
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FMVSS 214 LEFT SIDE
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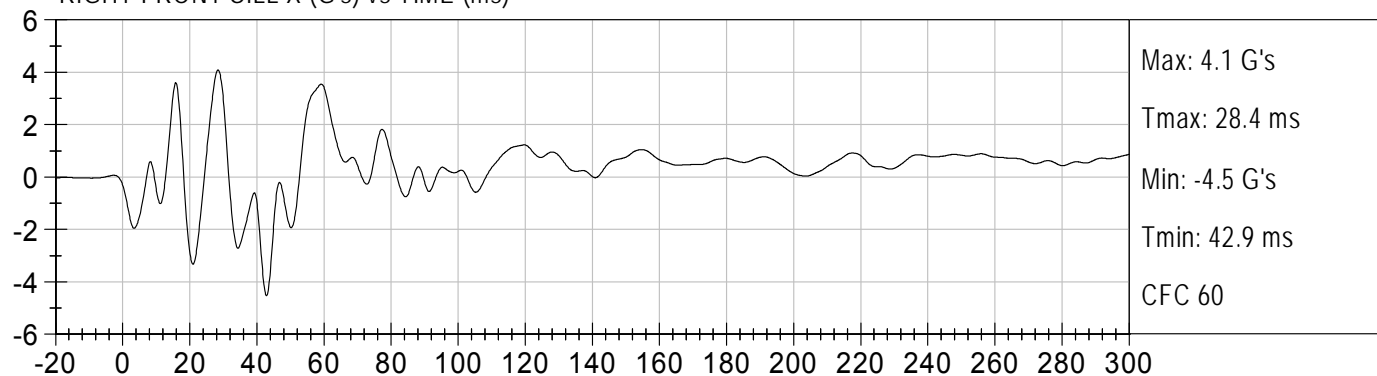




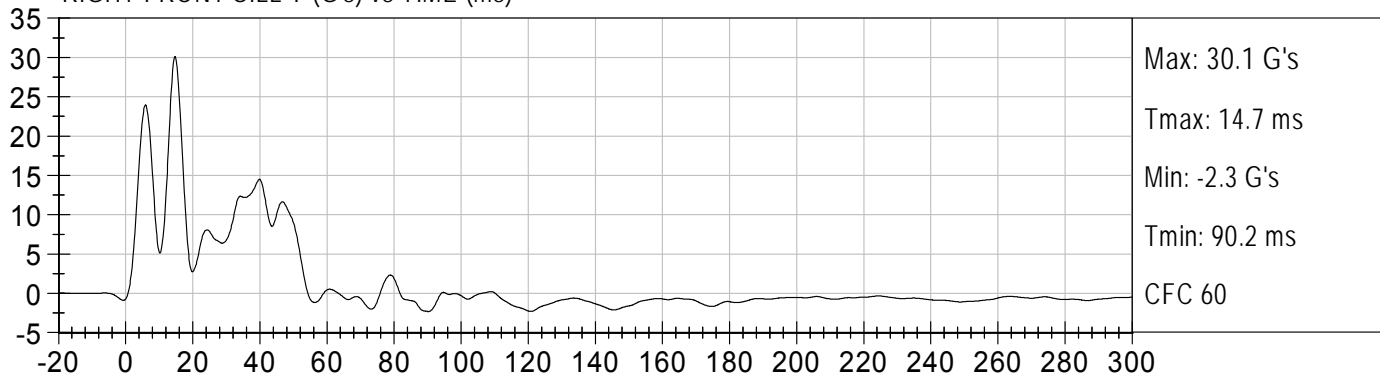
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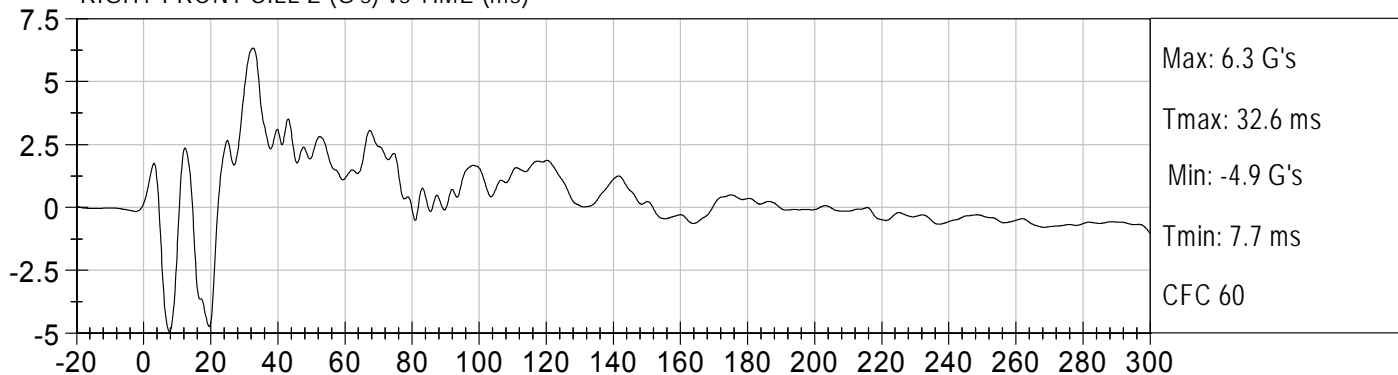
RIGHT FRONT SILL X (G's) vs TIME (ms)



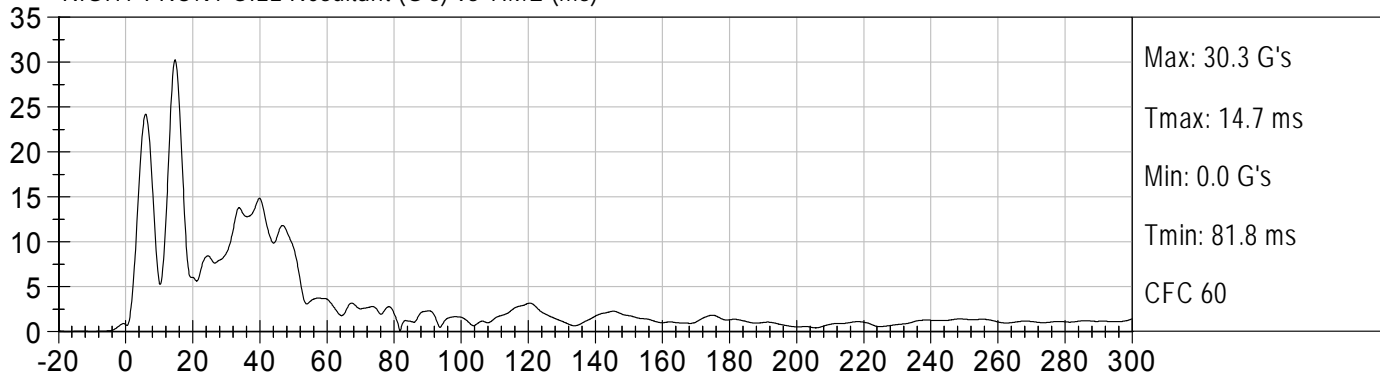
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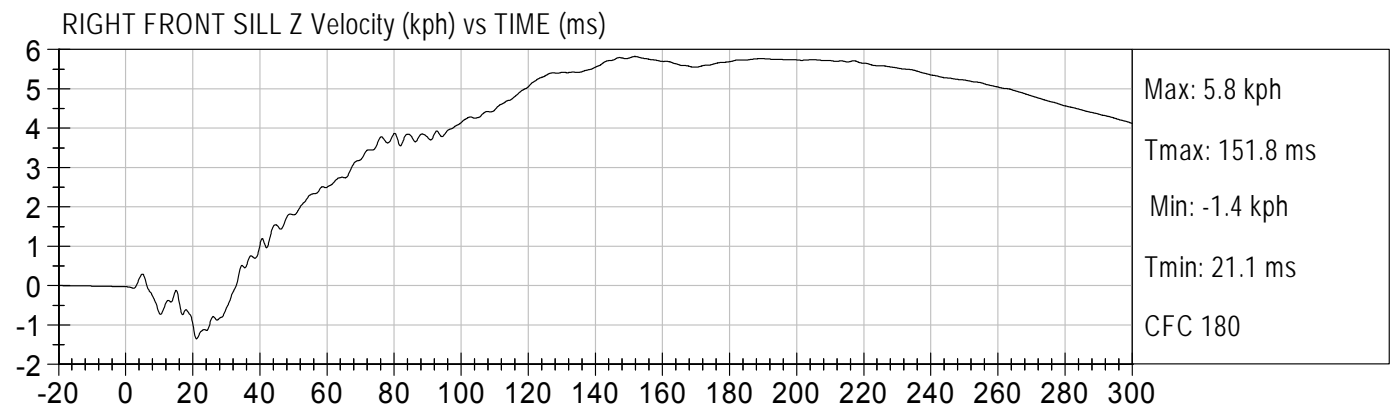
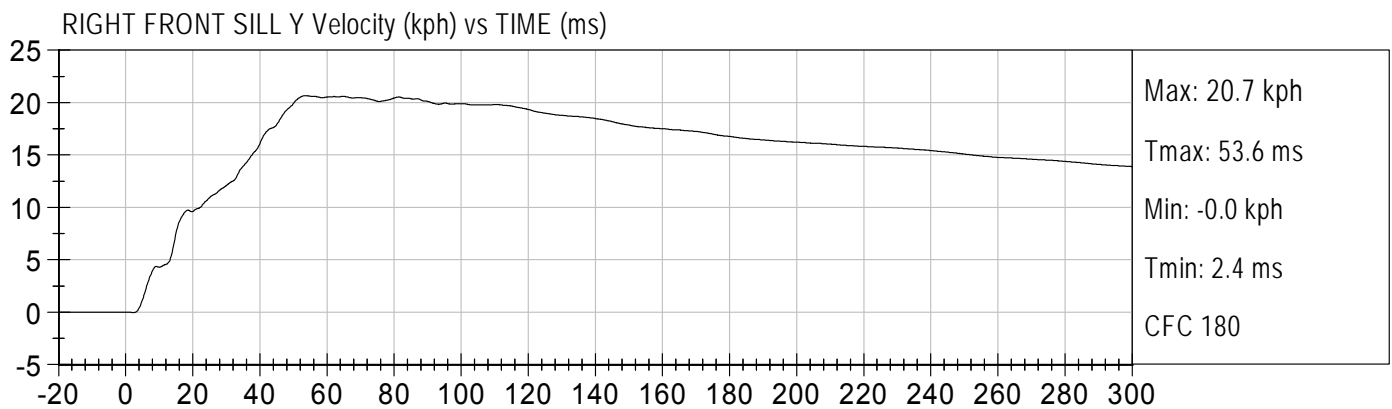
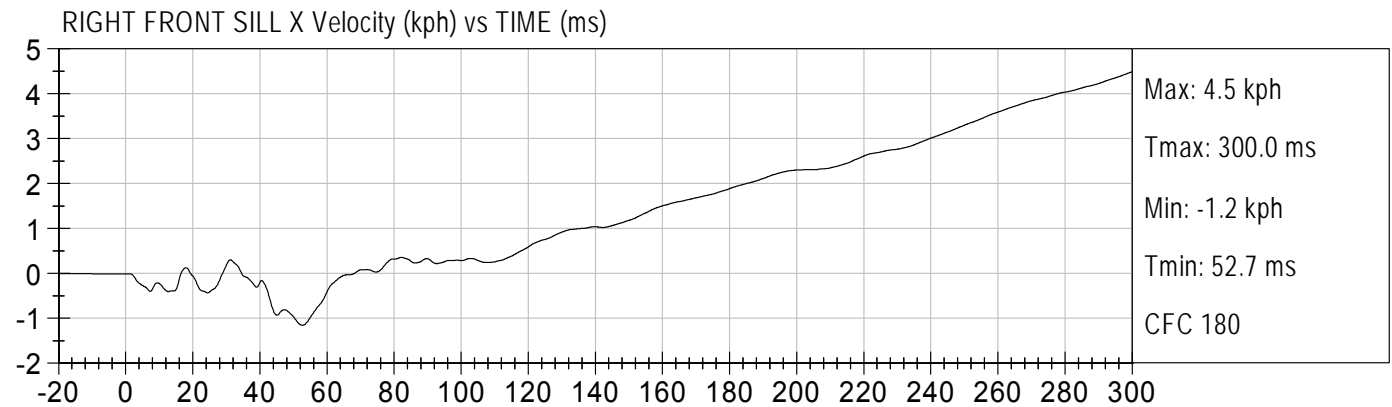


RIGHT FRONT SILL Z (G's) vs TIME (ms)



RIGHT FRONT SILL Resultant (G's) vs TIME (ms)



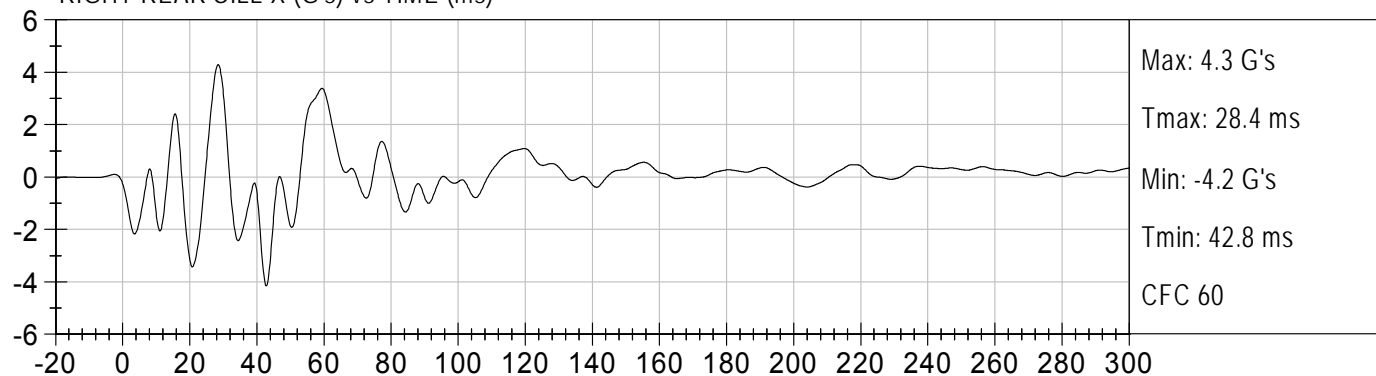




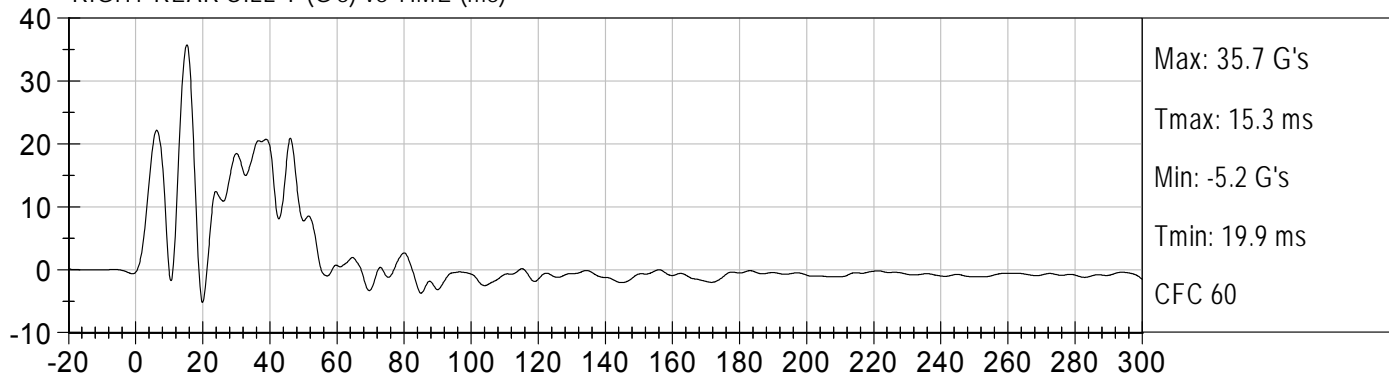
FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

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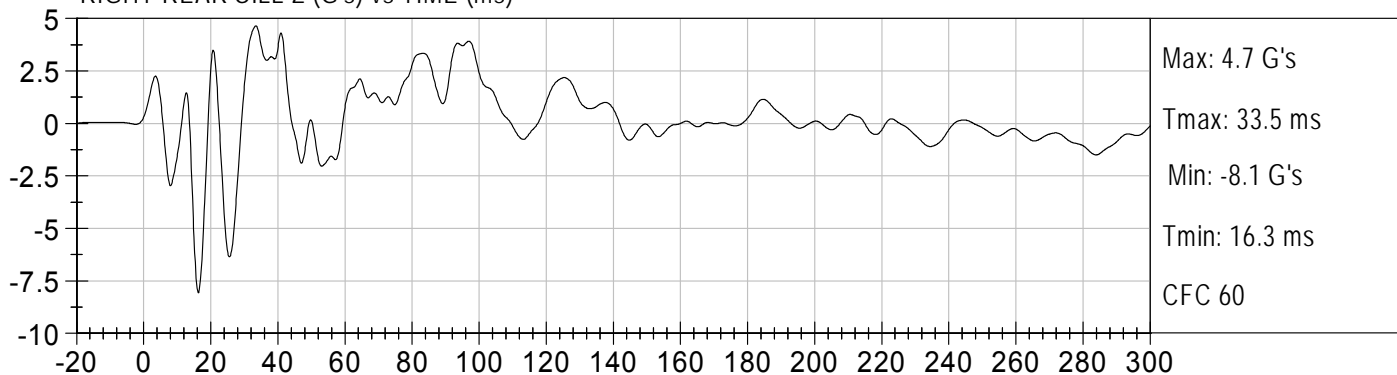
RIGHT REAR SILL X (G's) vs TIME (ms)



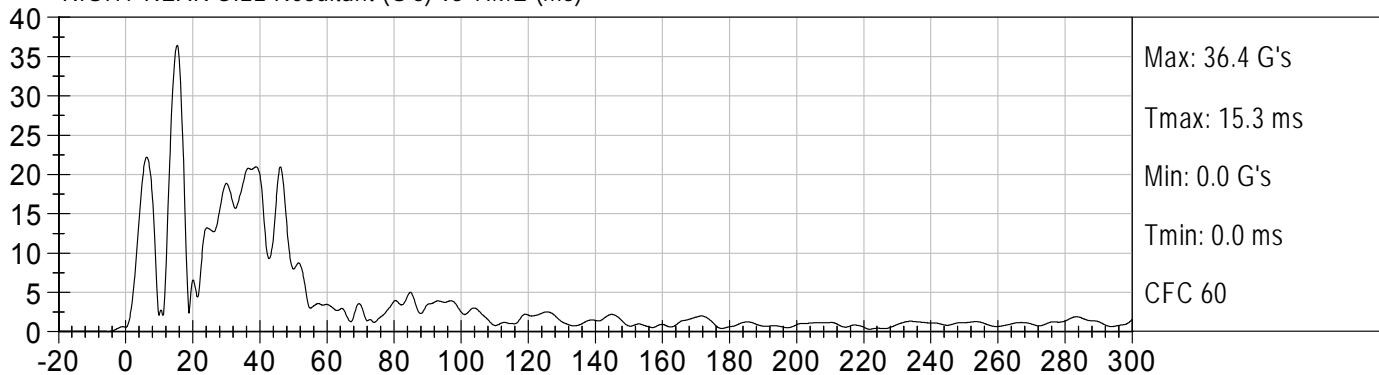
RIGHT REAR SILL Y (G's) vs TIME (ms)



RIGHT REAR SILL Z (G's) vs TIME (ms)



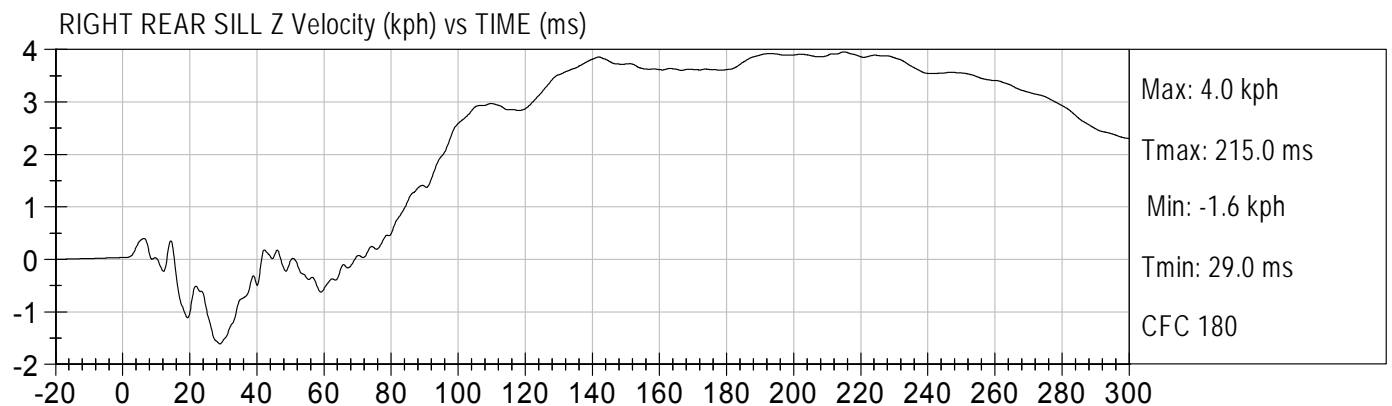
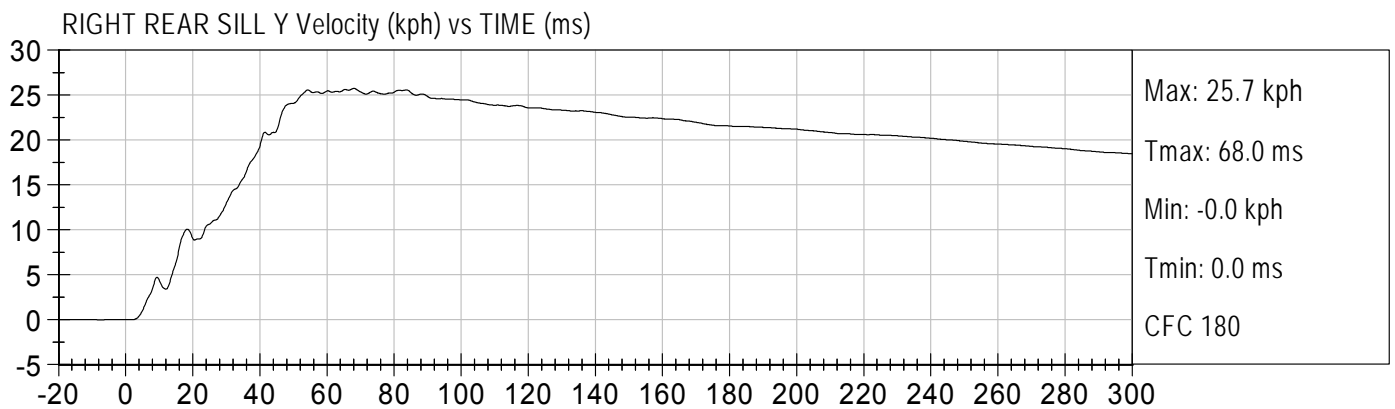
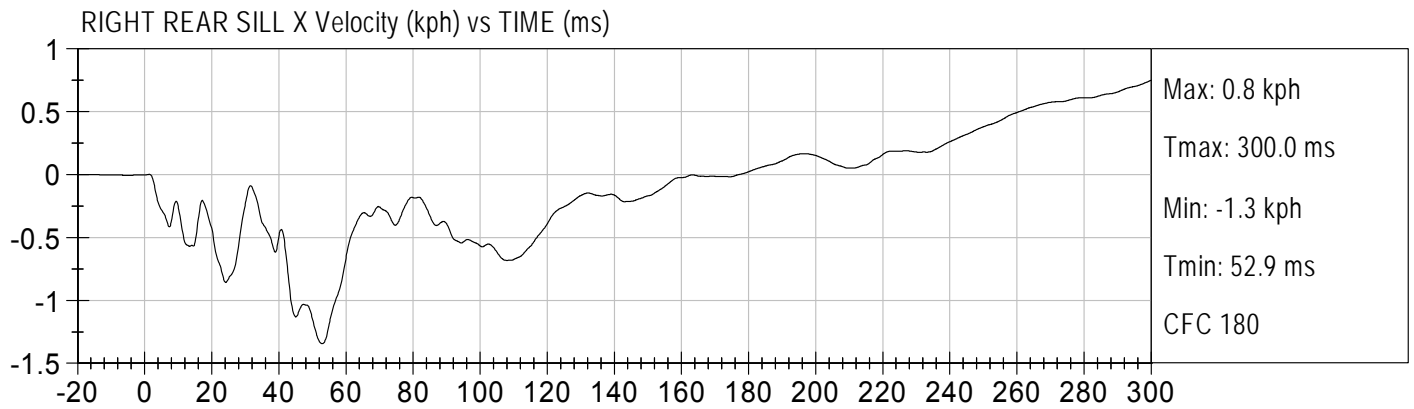
RIGHT REAR SILL Resultant (G's) vs TIME (ms)





FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

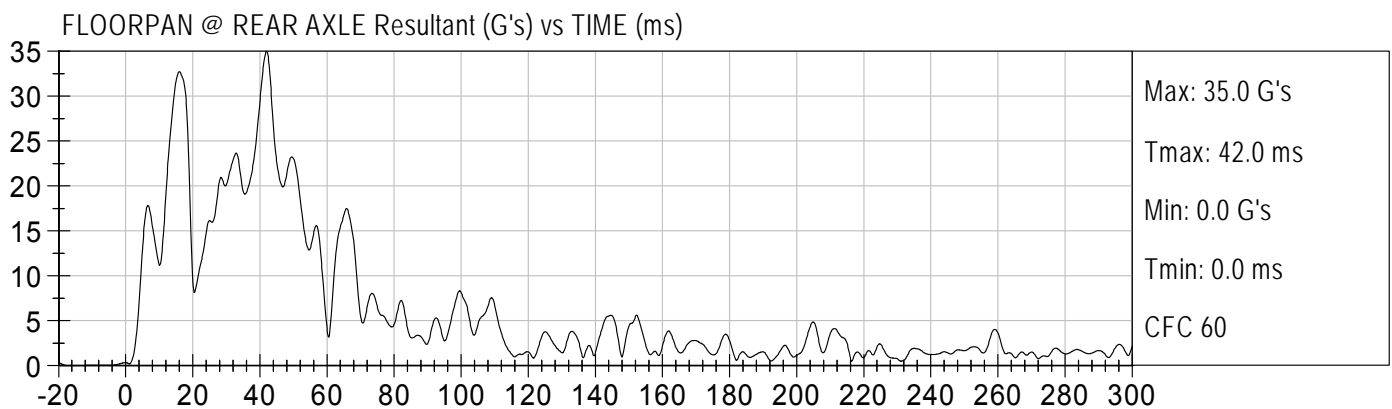
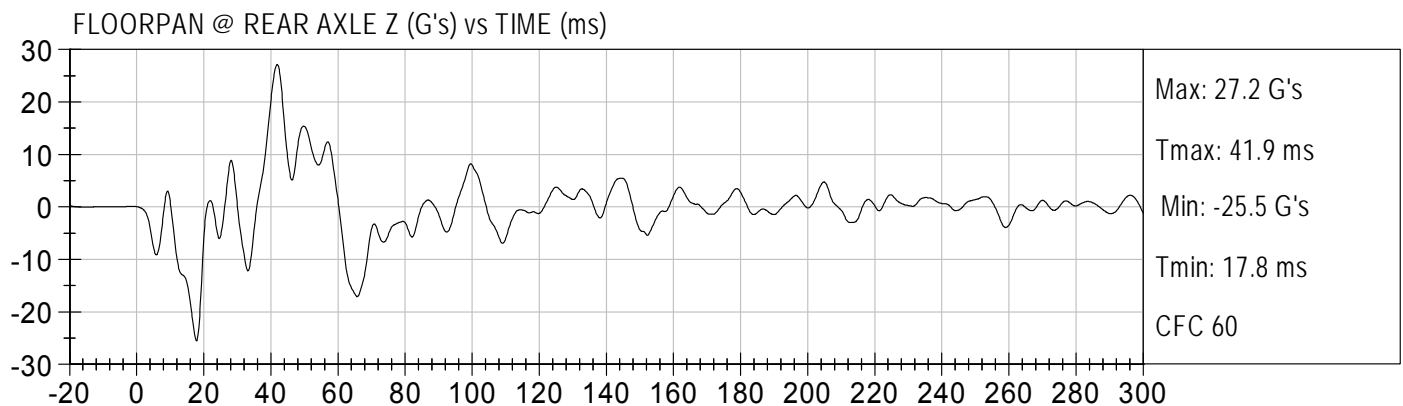
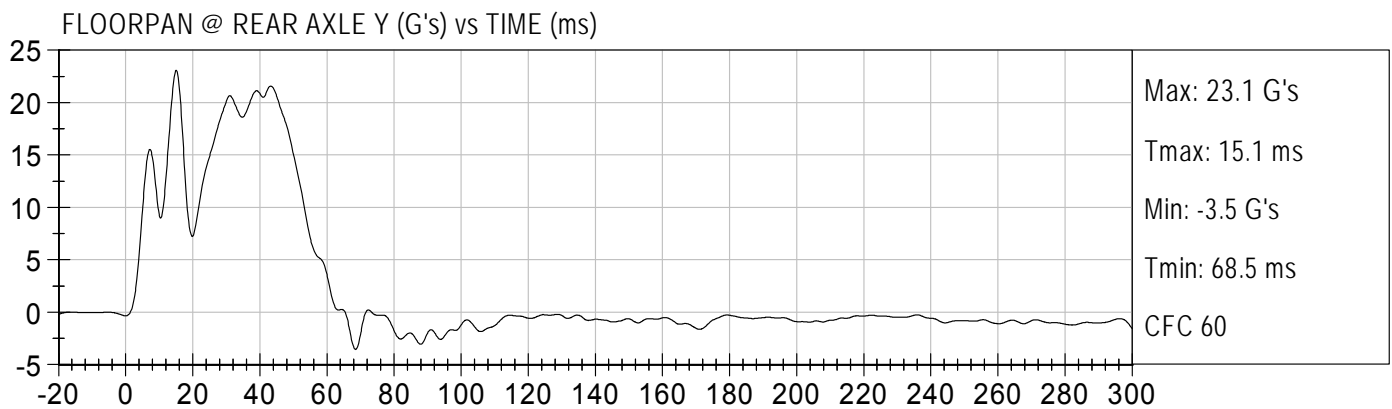
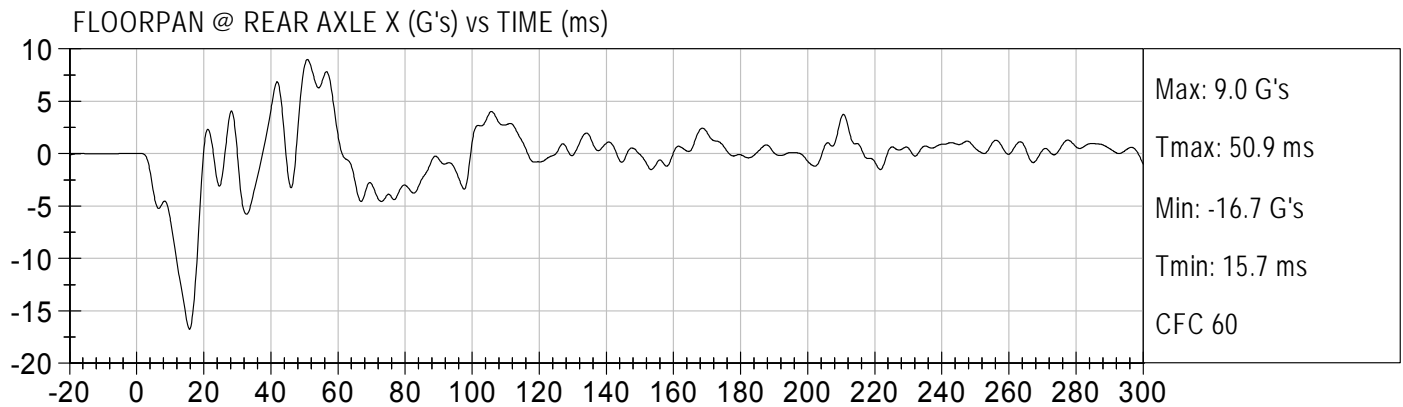
Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)





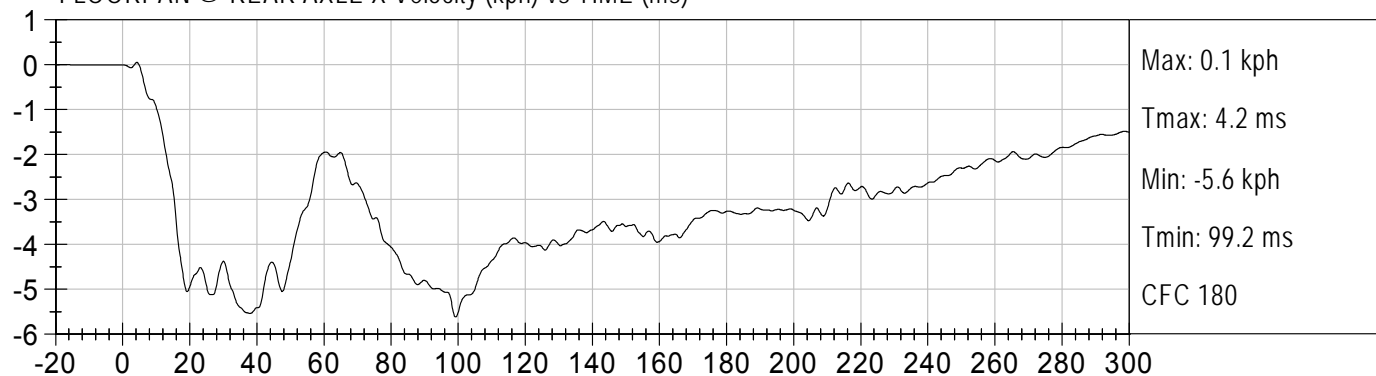
FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)

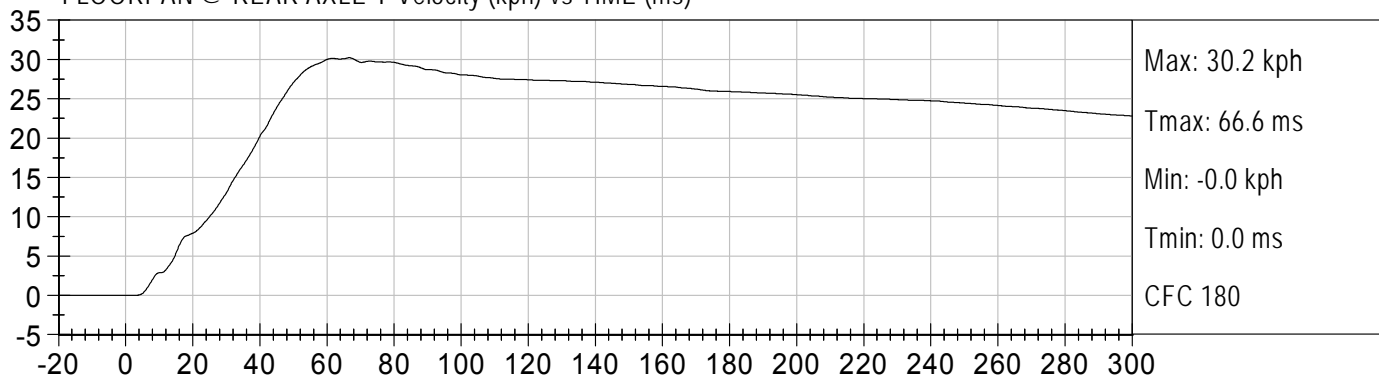




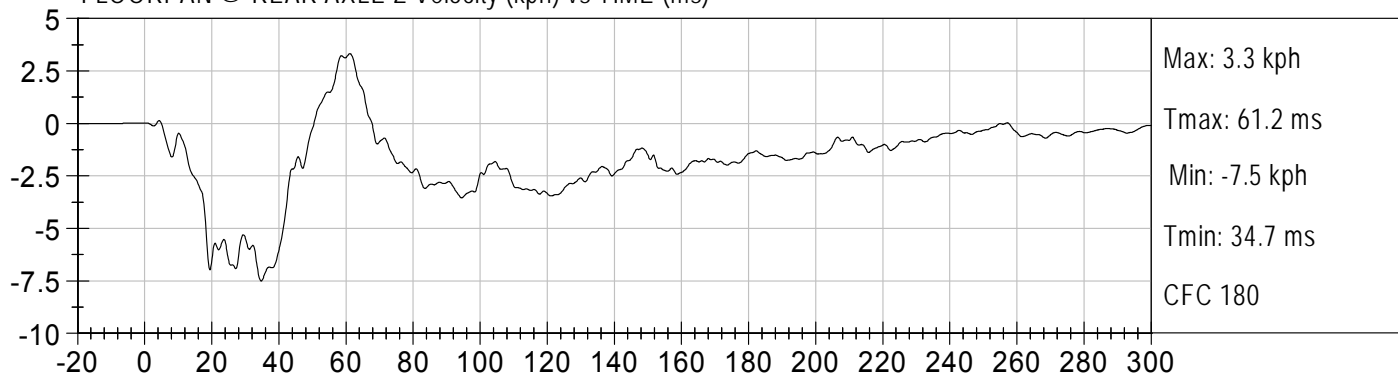
FLOORPAN @ REAR AXLE X Velocity (kph) vs TIME (ms)



FLOORPAN @ REAR AXLE Y Velocity (kph) vs TIME (ms)

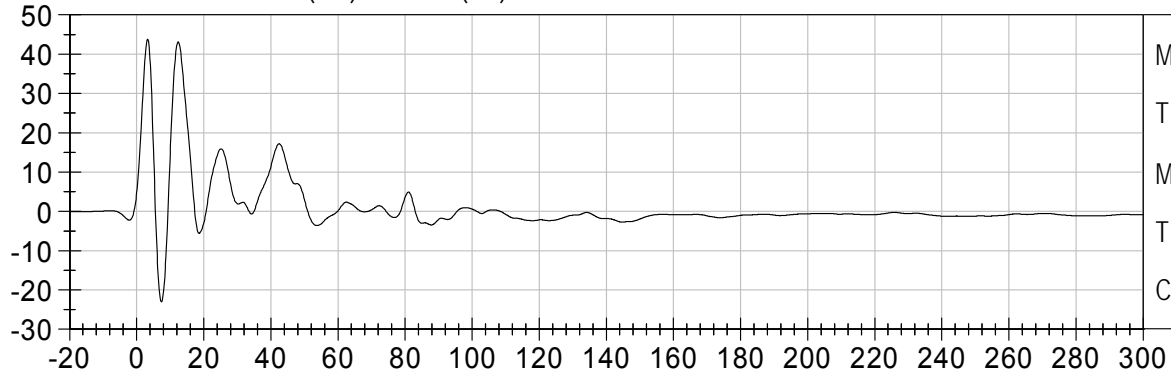


FLOORPAN @ REAR AXLE Z Velocity (kph) vs TIME (ms)

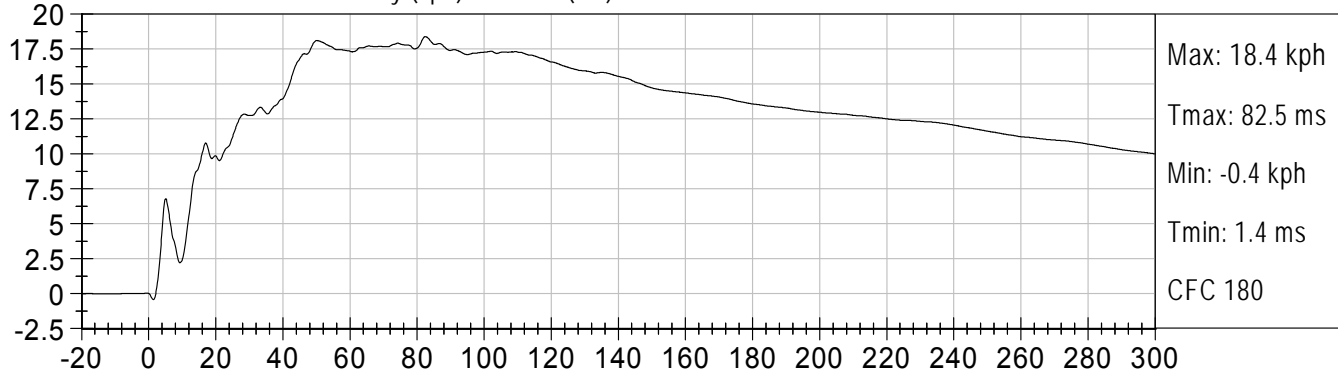




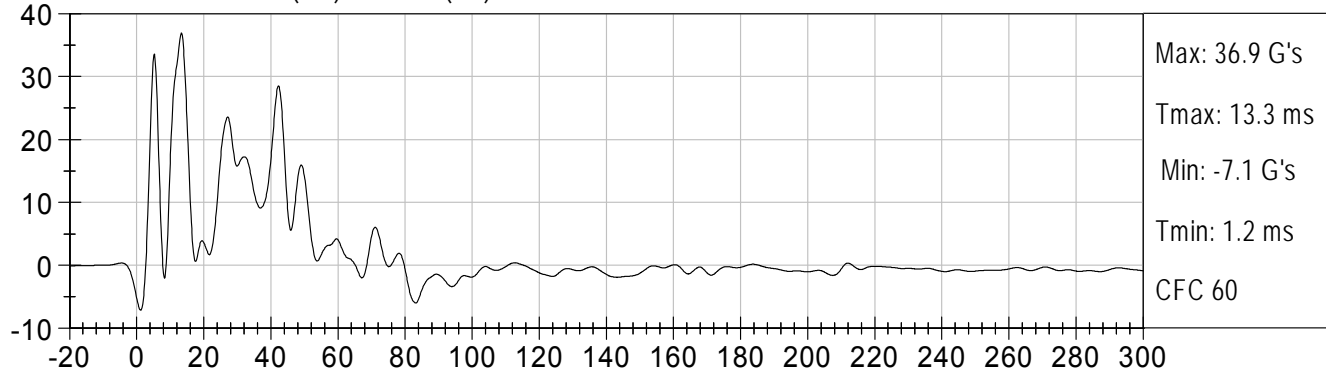
LEFT FRONT SILL Y (G's) vs TIME (ms)



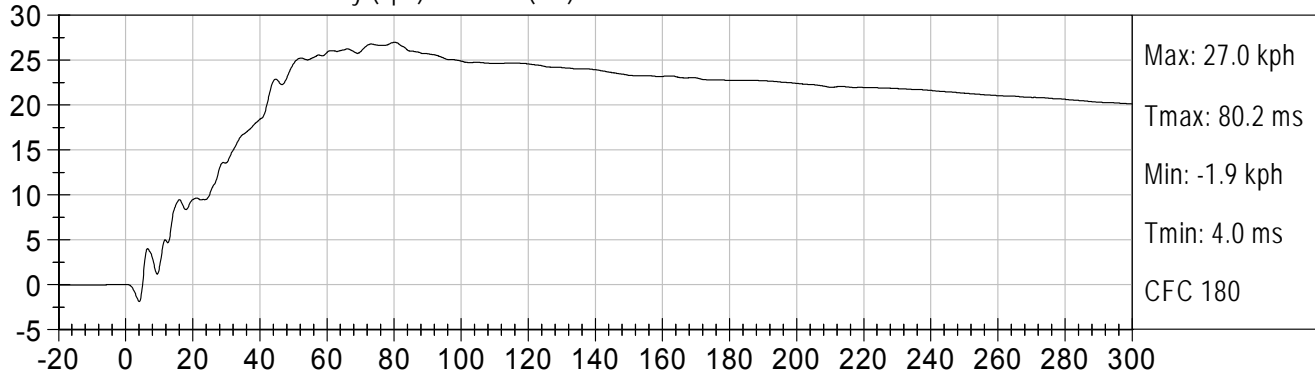
LEFT FRONT SILL Y Velocity (kph) vs TIME (ms)



LEFT REAR SILL Y (G's) vs TIME (ms)



LEFT REAR SILL Y Velocity (kph) vs TIME (ms)

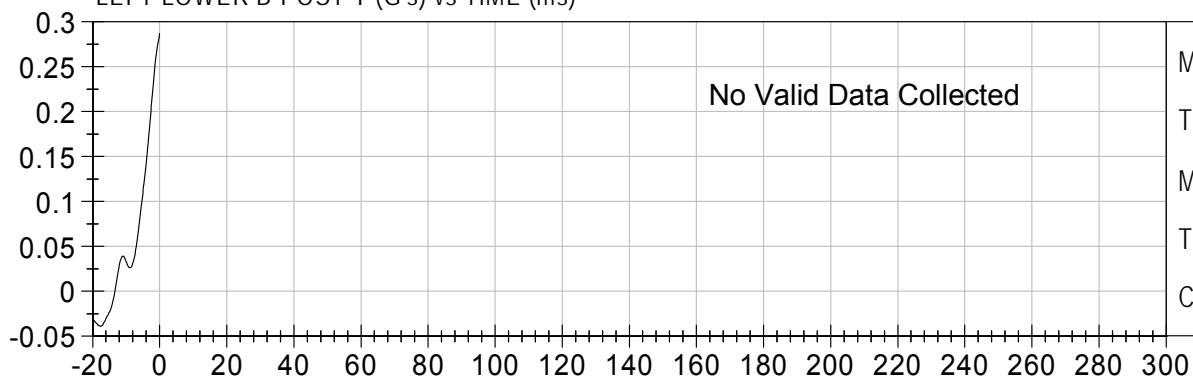




FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

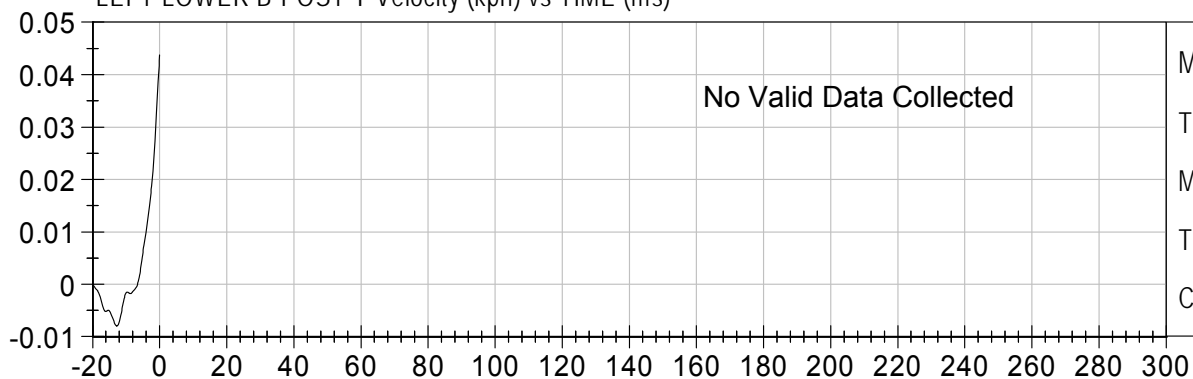
Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)

LEFT LOWER B-POST Y (G's) vs TIME (ms)



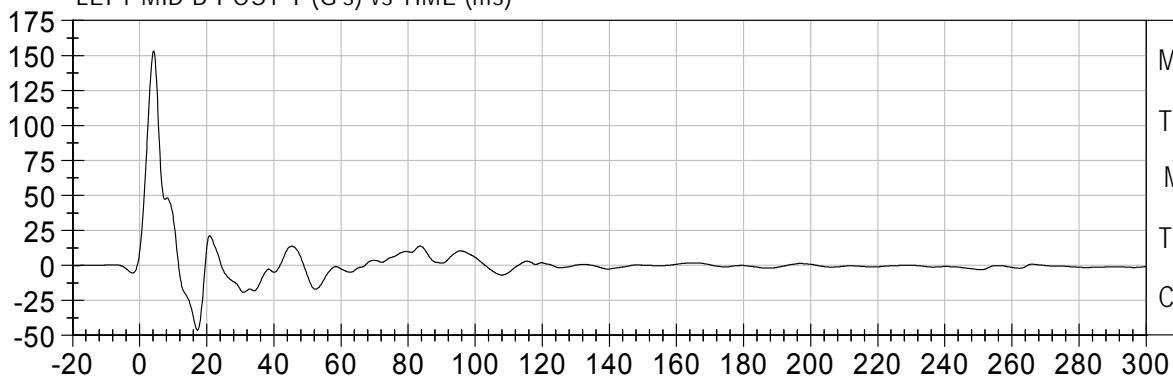
Max: 0.3 G's
Tmax: 0.0 ms
Min: -0.0 G's
Tmin: 0.0 ms
CFC 60

LEFT LOWER B-POST Y Velocity (kph) vs TIME (ms)



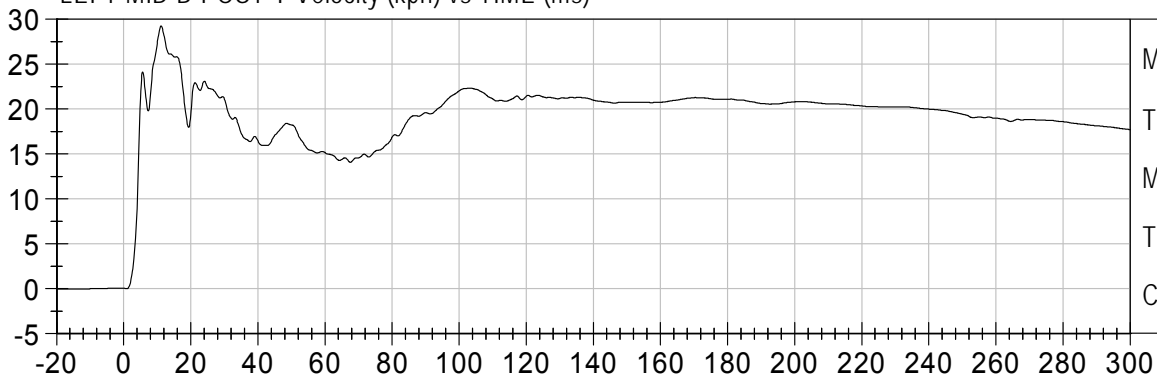
Max: 0.0 kph
Tmax: 0.0 ms
Min: -0.0 kph
Tmin: 0.0 ms
CFC 180

LEFT MID B-POST Y (G's) vs TIME (ms)



Max: 153.2 G's
Tmax: 4.2 ms
Min: -46.4 G's
Tmin: 17.2 ms
CFC 60

LEFT MID B-POST Y Velocity (kph) vs TIME (ms)



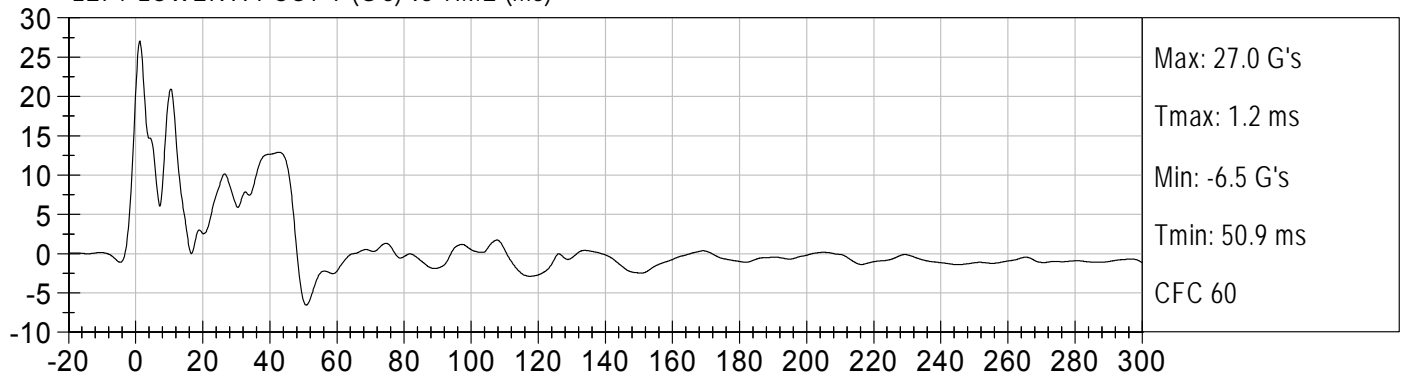
Max: 29.2 kph
Tmax: 11.1 ms
Min: -0.0 kph
Tmin: 0.0 ms
CFC 180



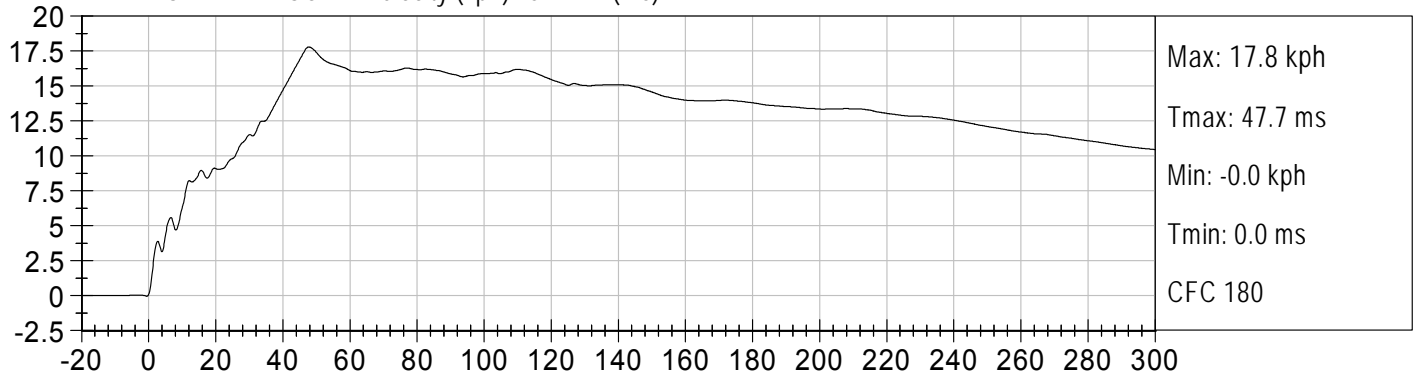
FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)

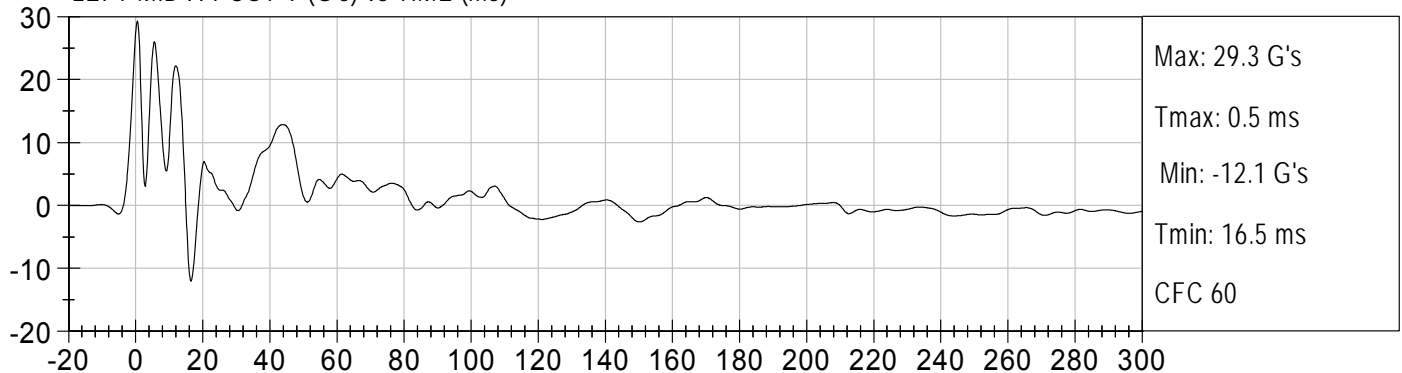
LEFT LOWER A-POST Y (G's) vs TIME (ms)



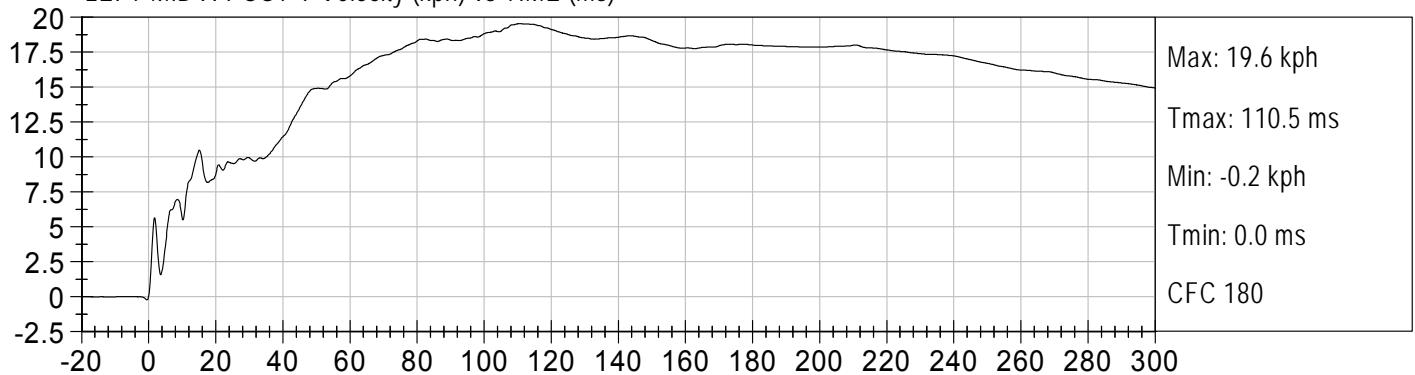
LEFT LOWER A-POST Y Velocity (kph) vs TIME (ms)



LEFT MID A-POST Y (G's) vs TIME (ms)



LEFT MID A-POST Y Velocity (kph) vs TIME (ms)

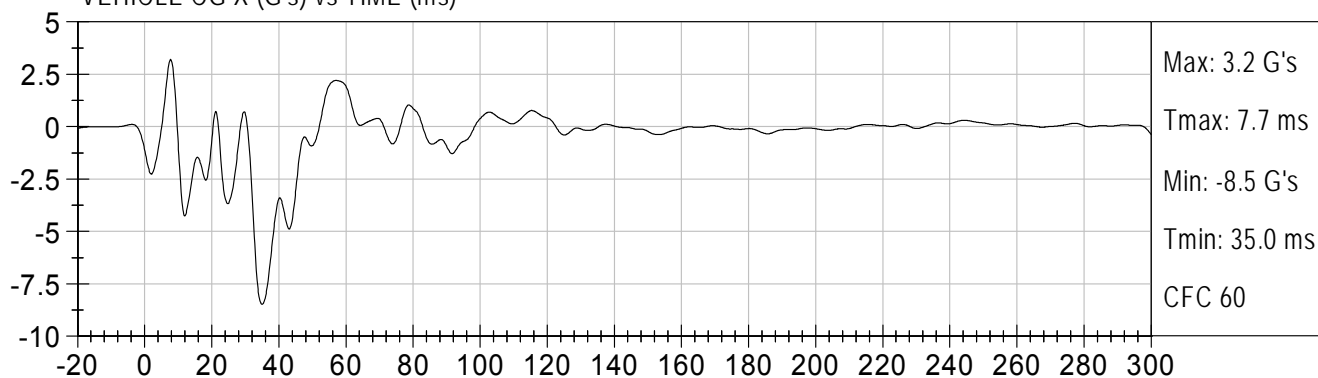




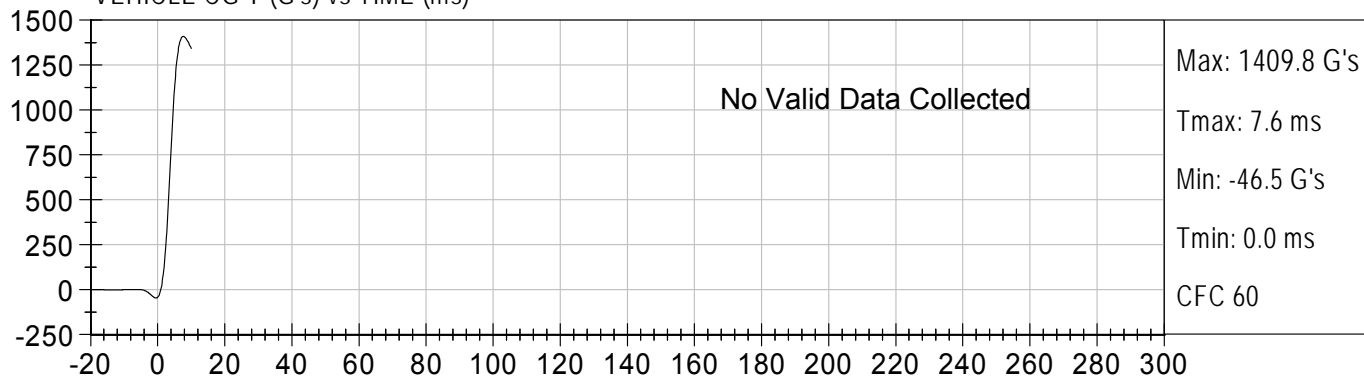
FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)

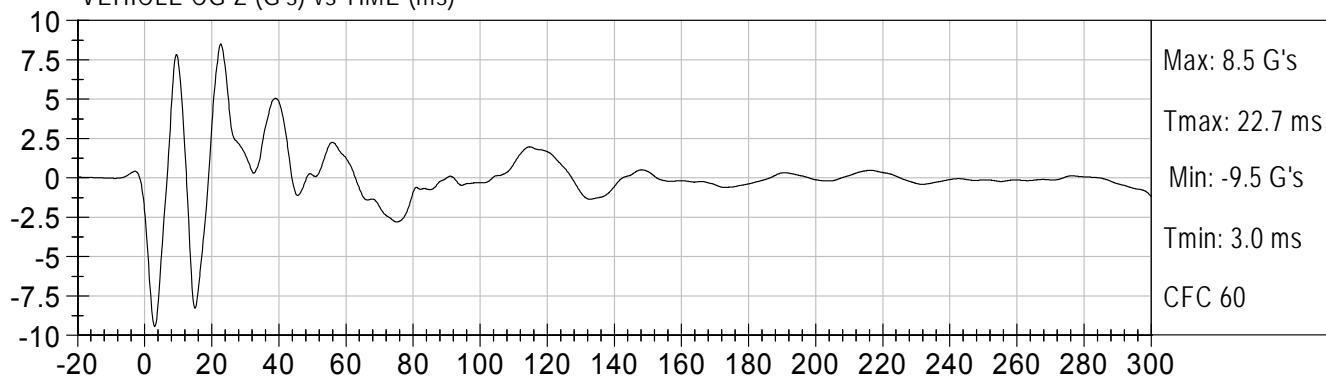
VEHICLE CG X (G's) vs TIME (ms)



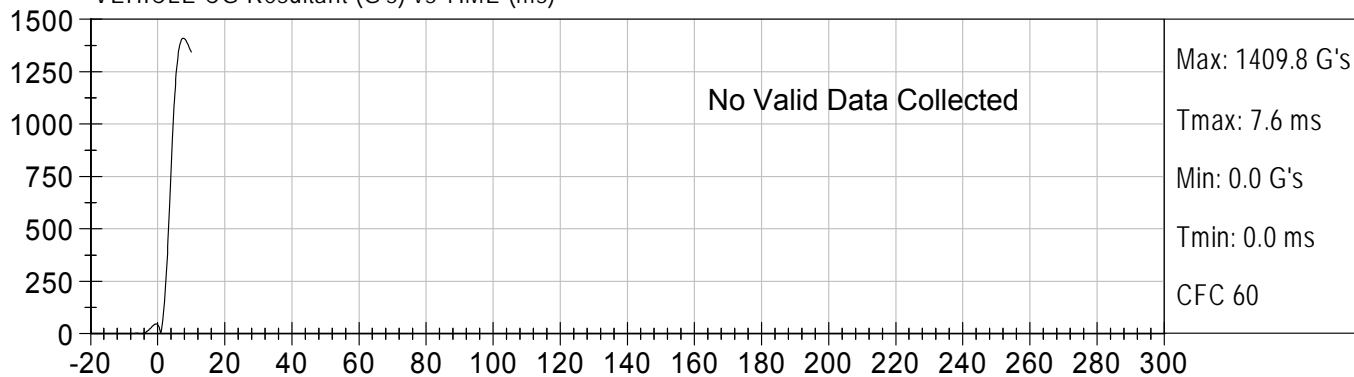
VEHICLE CG Y (G's) vs TIME (ms)



VEHICLE CG Z (G's) vs TIME (ms)

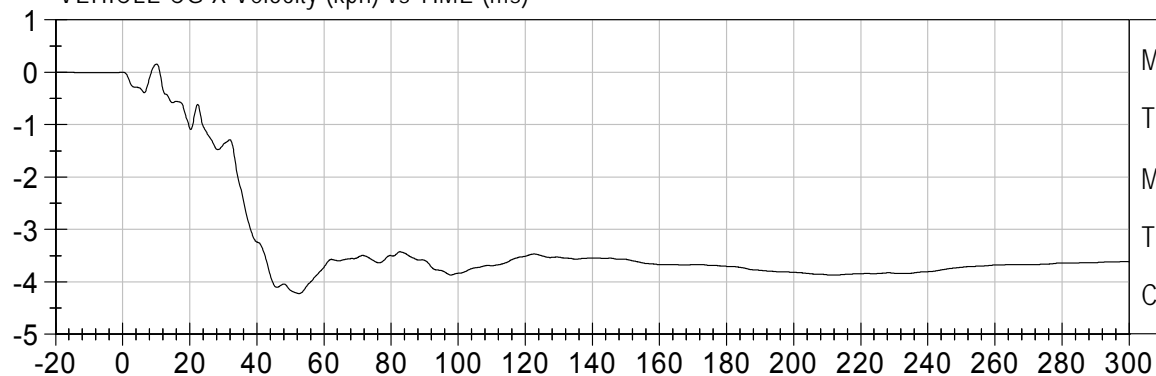


VEHICLE CG Resultant (G's) vs TIME (ms)

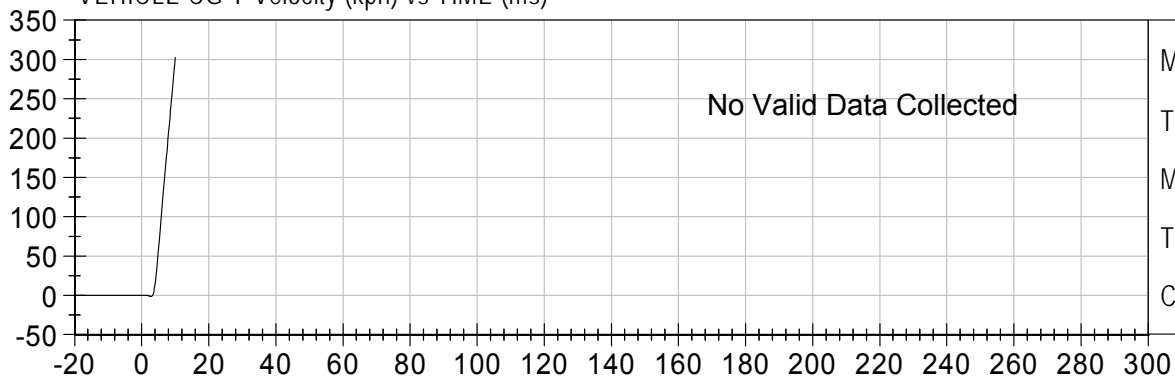




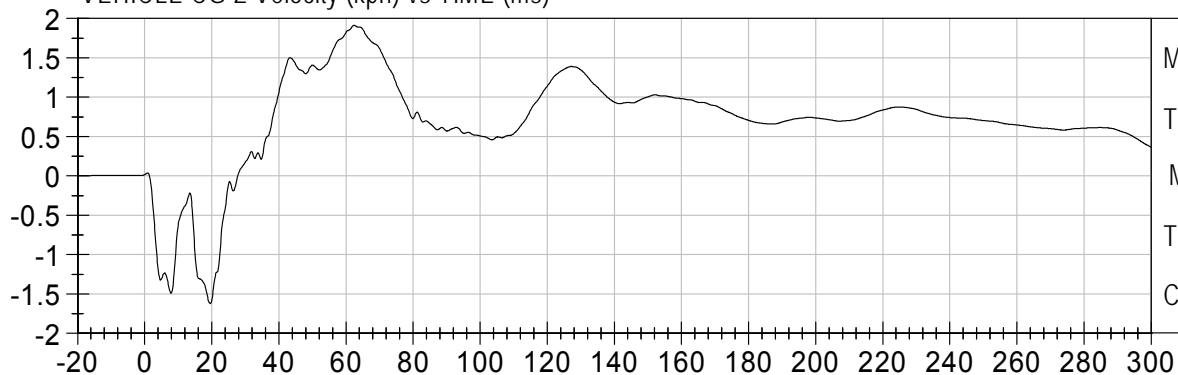
VEHICLE CG X Velocity (kph) vs TIME (ms)



VEHICLE CG Y Velocity (kph) vs TIME (ms)



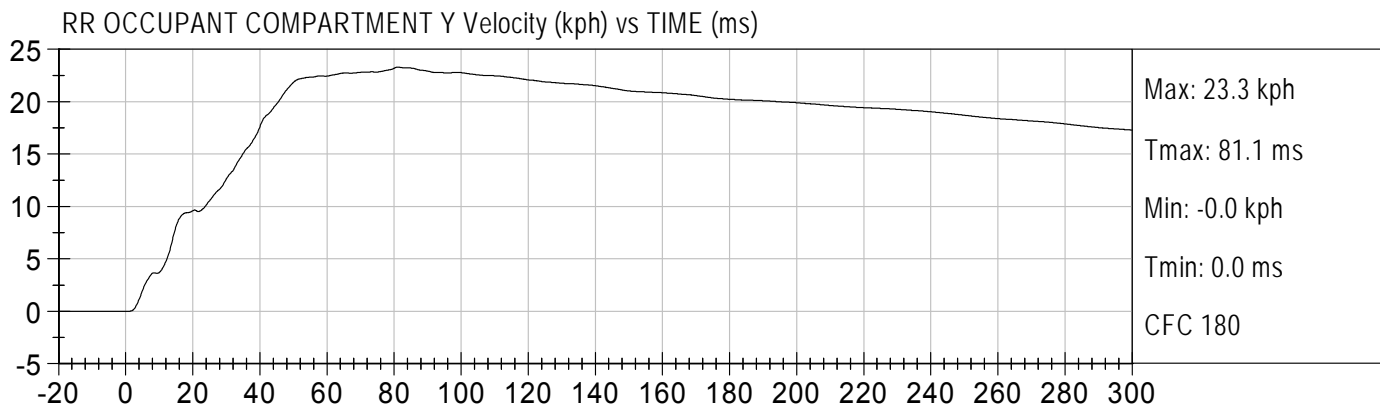
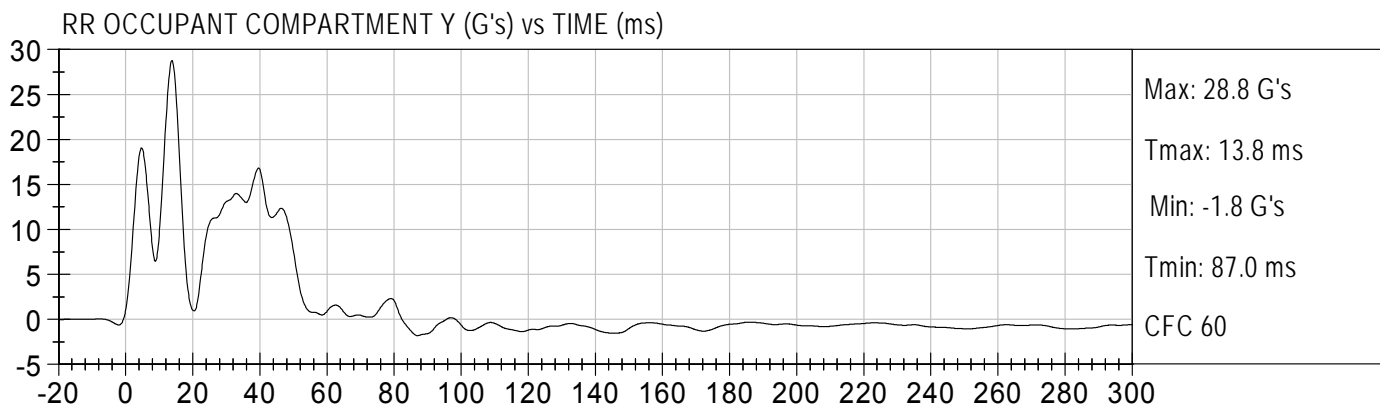
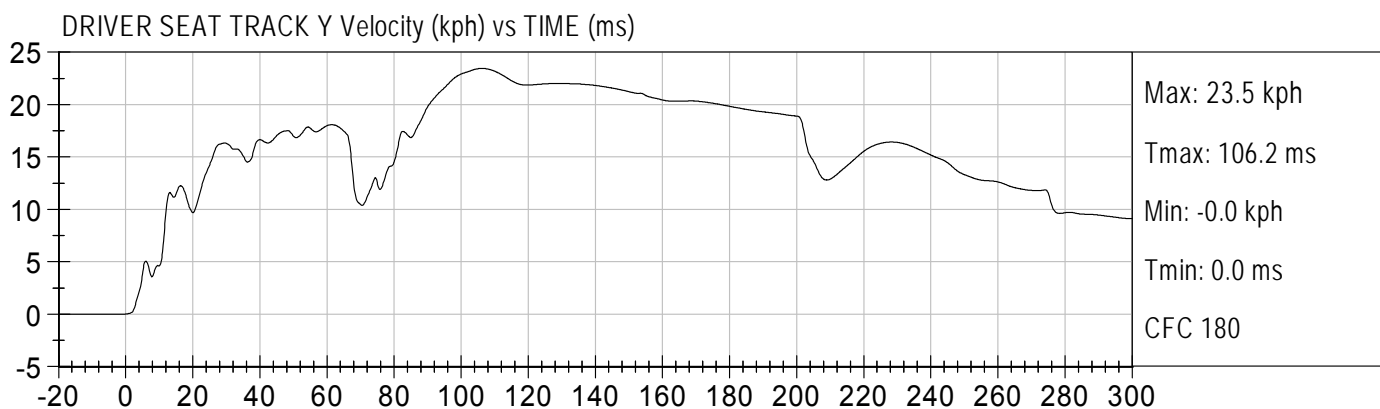
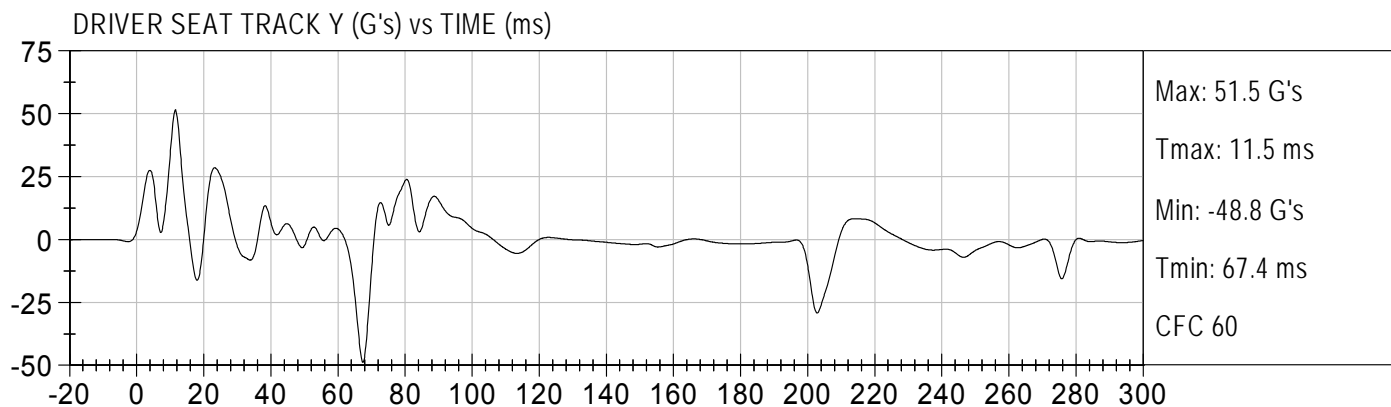
VEHICLE CG Z Velocity (kph) vs TIME (ms)





FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

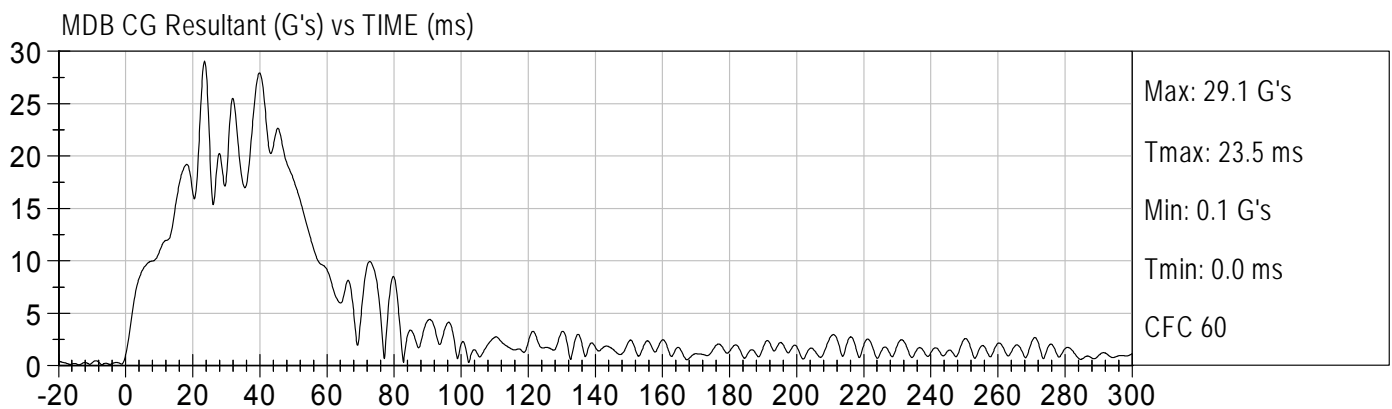
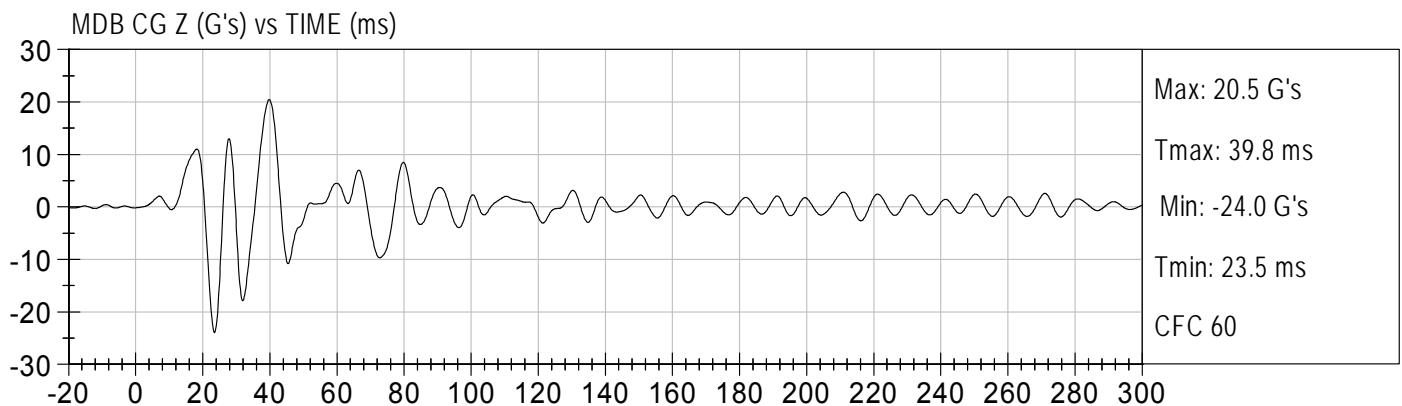
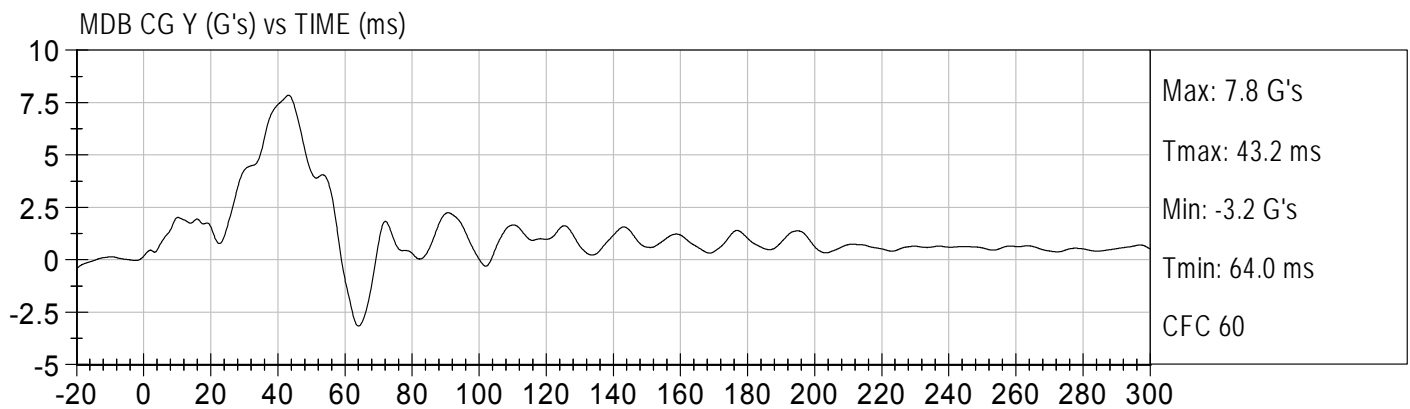
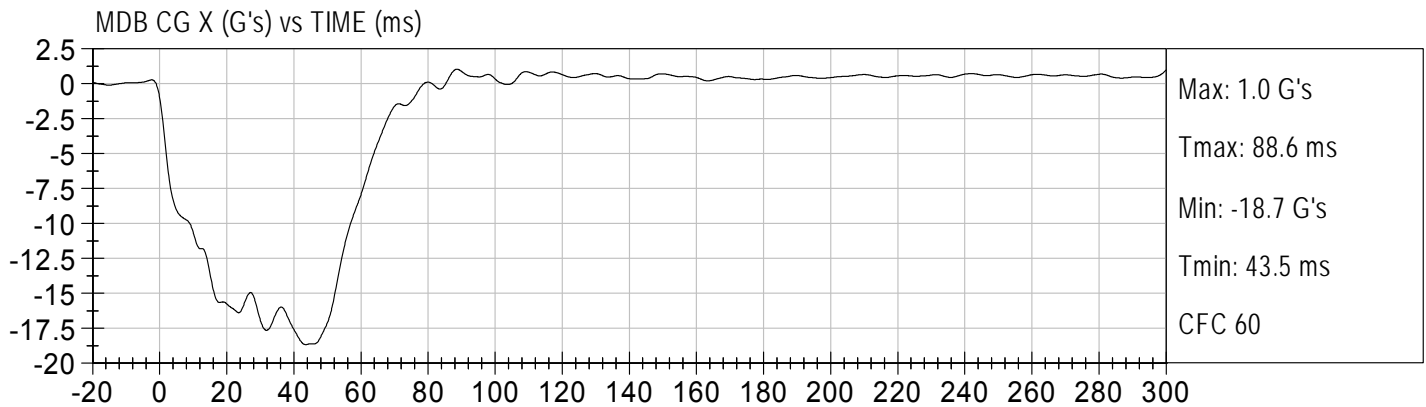
Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)





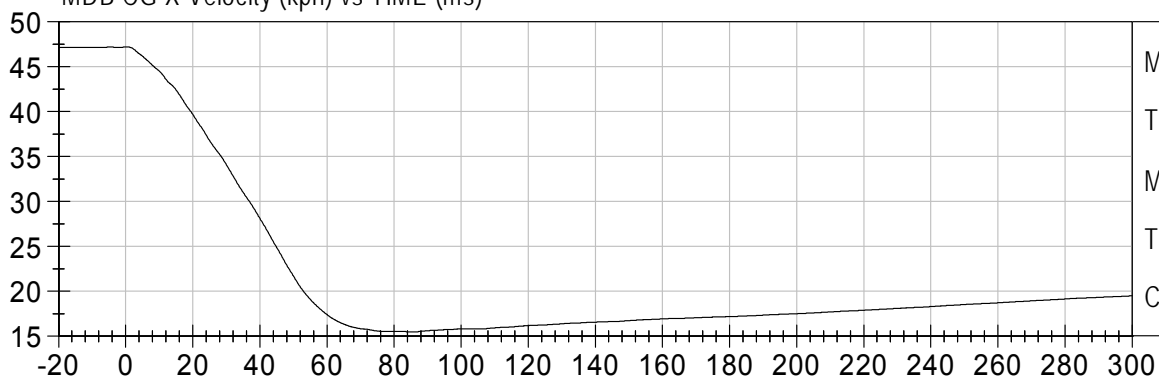
FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)

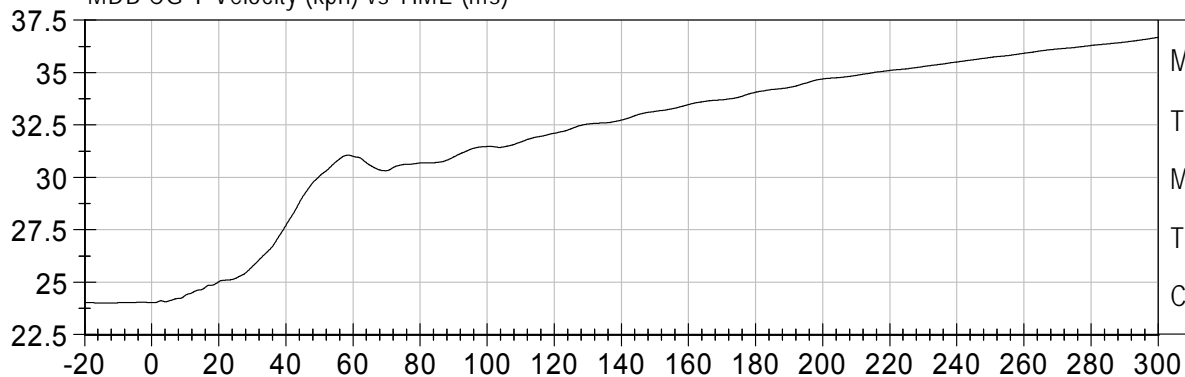




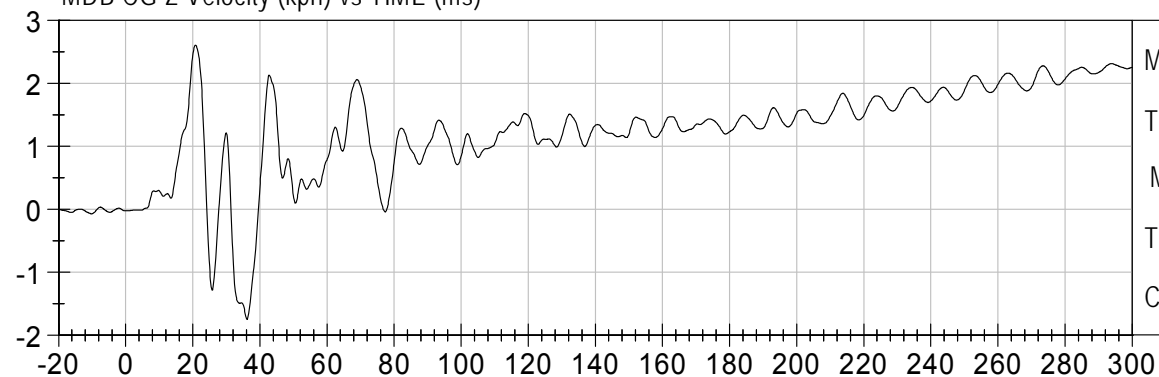
MDB CG X Velocity (kph) vs TIME (ms)



MDB CG Y Velocity (kph) vs TIME (ms)



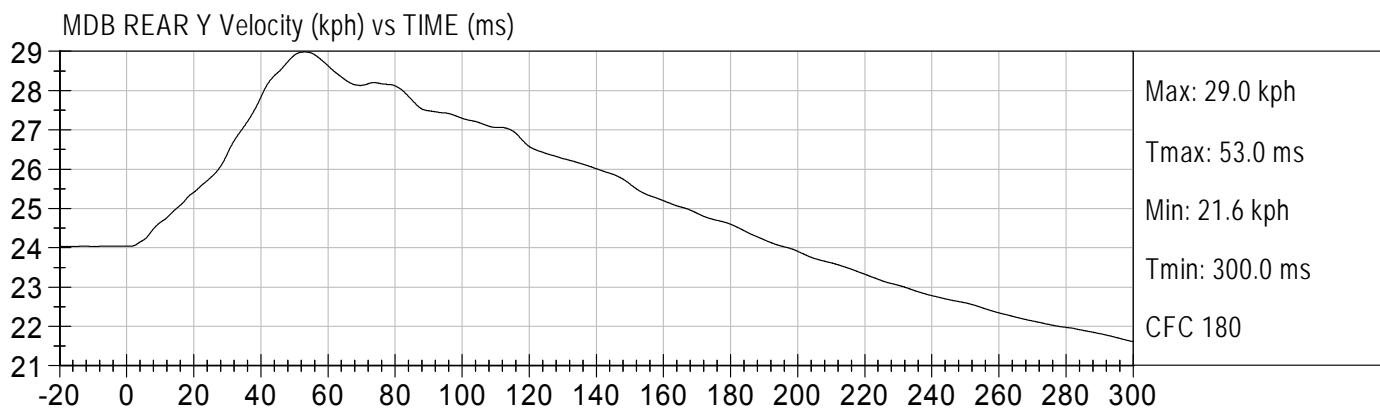
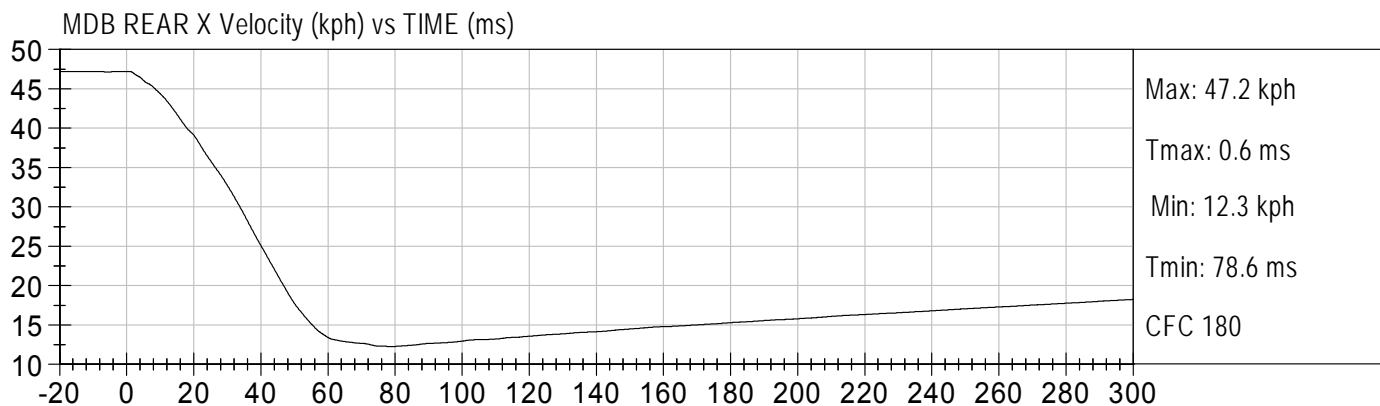
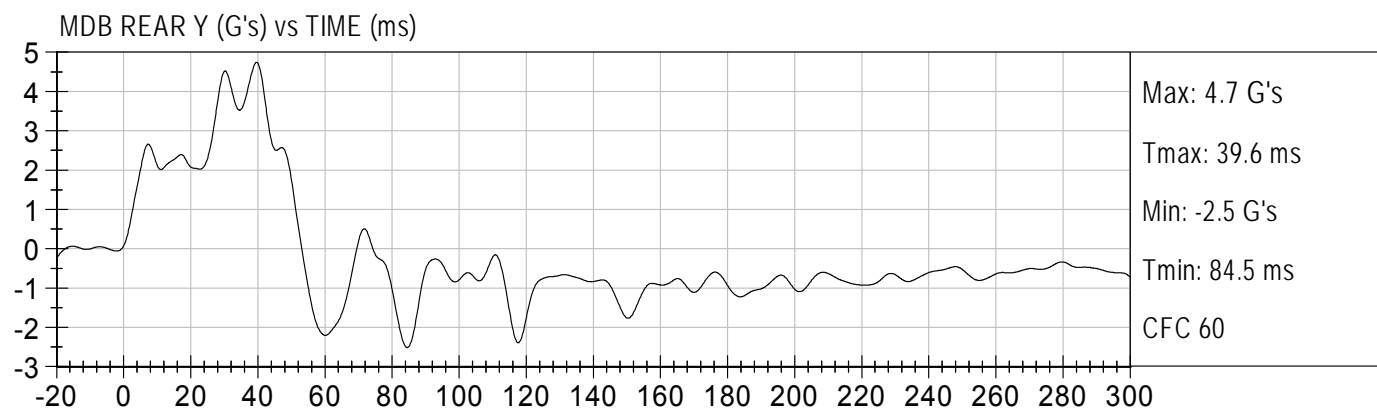
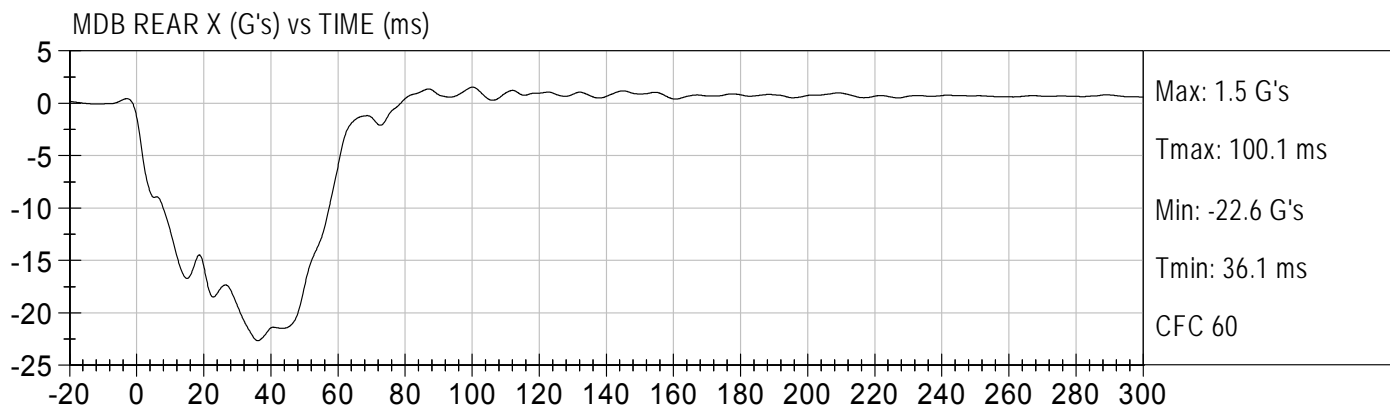
MDB CG Z Velocity (kph) vs TIME (ms)





FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

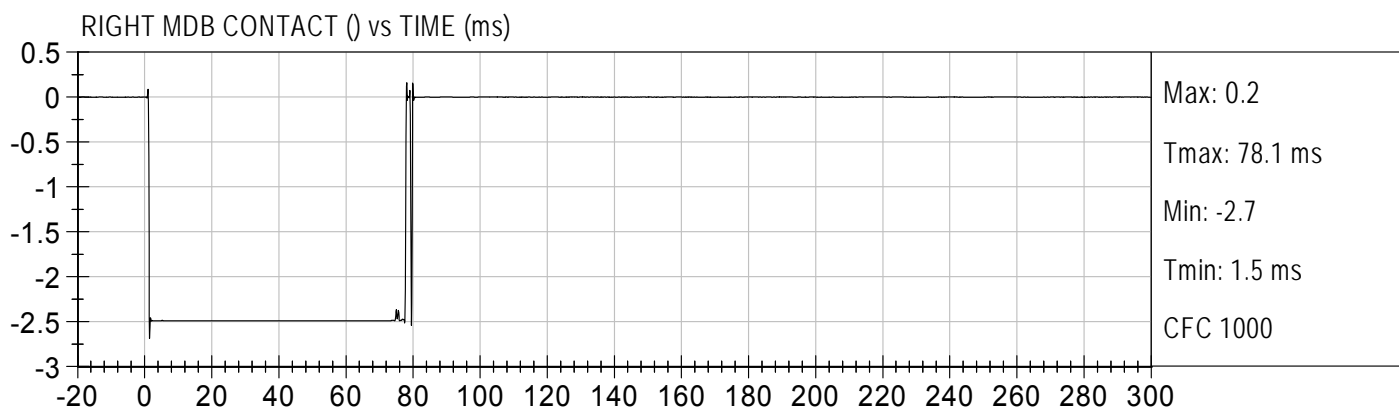
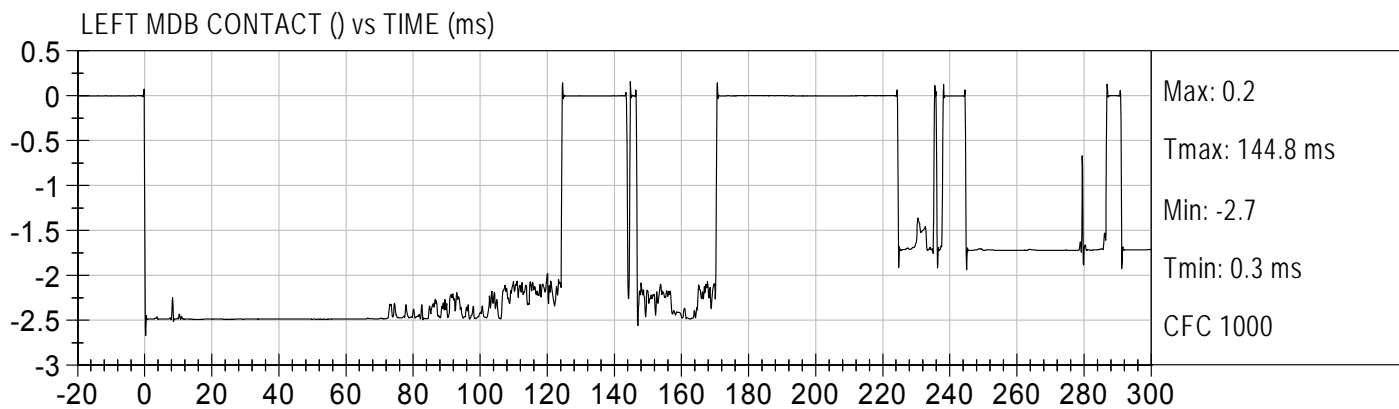
Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)





FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

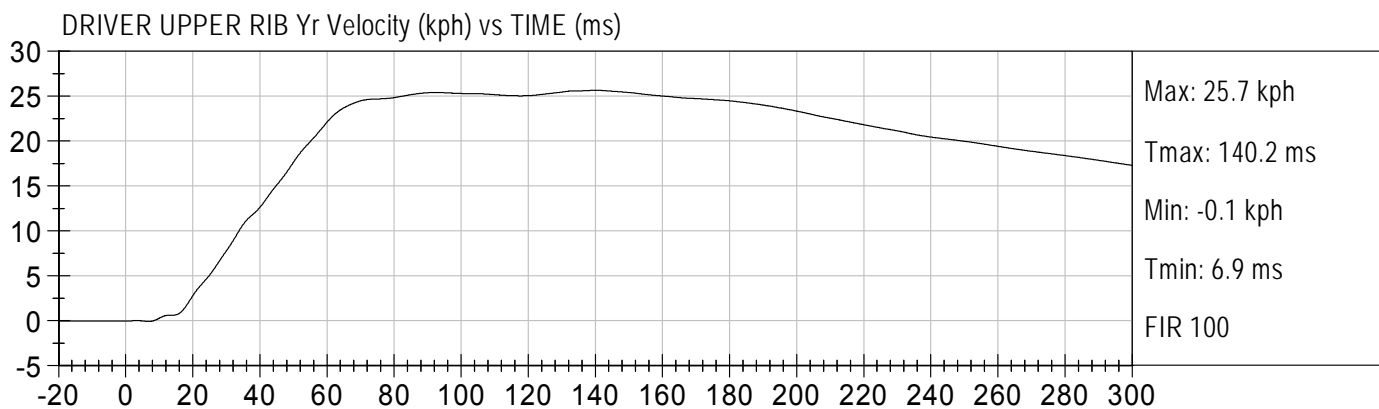
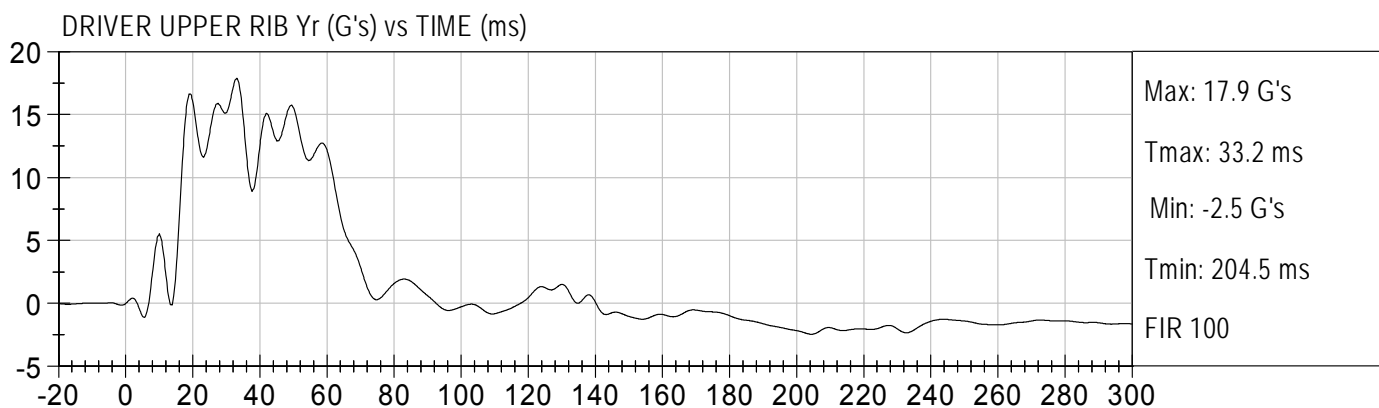
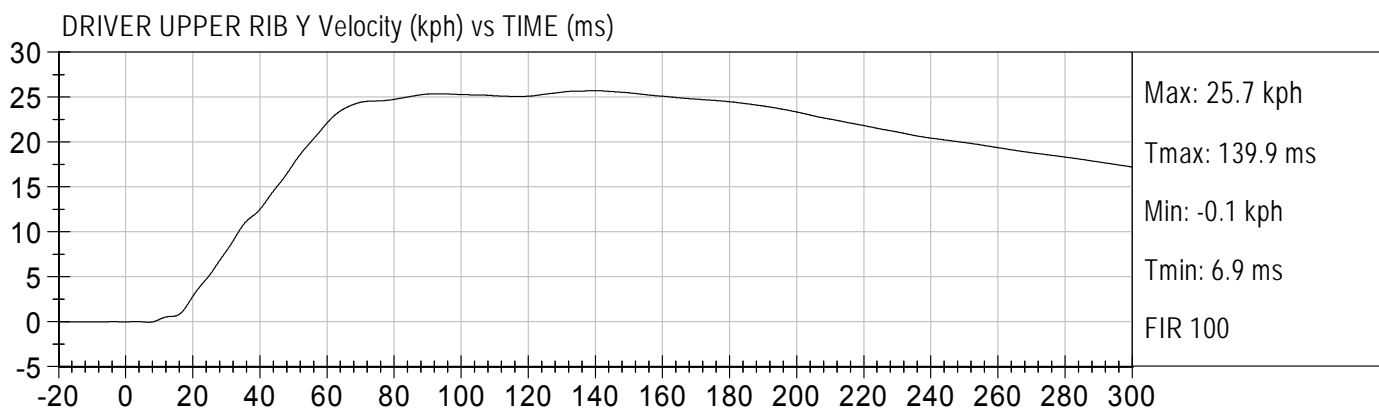
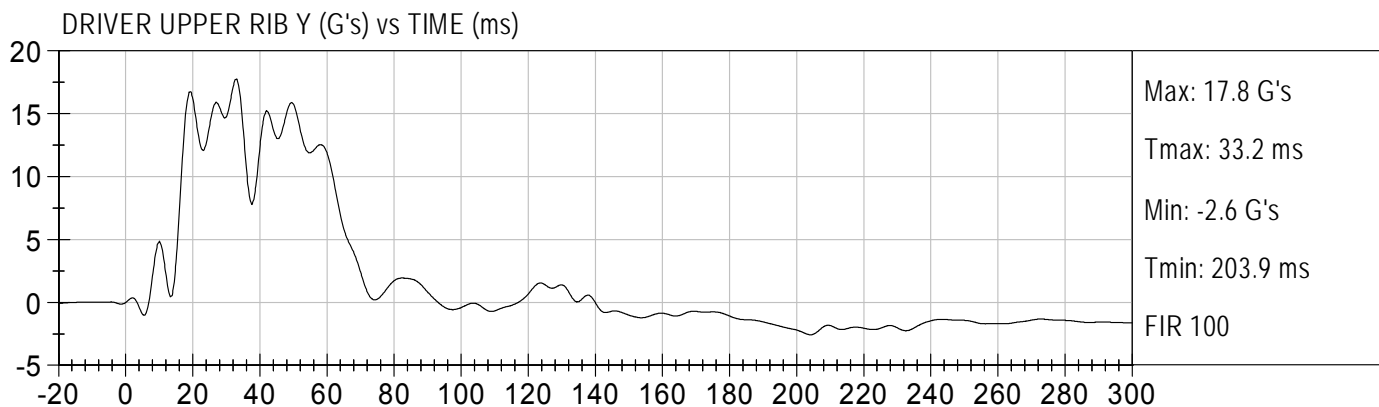
Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)





FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

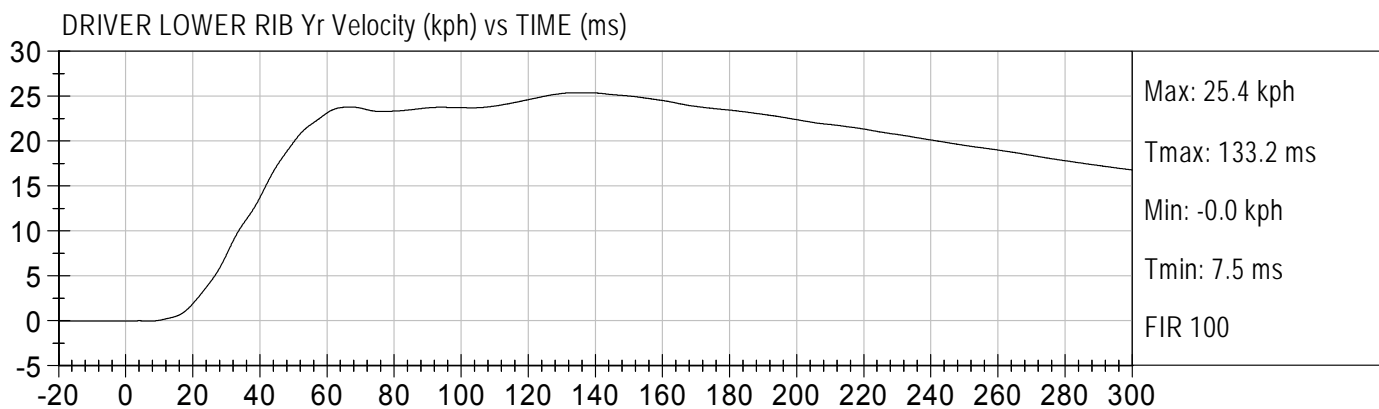
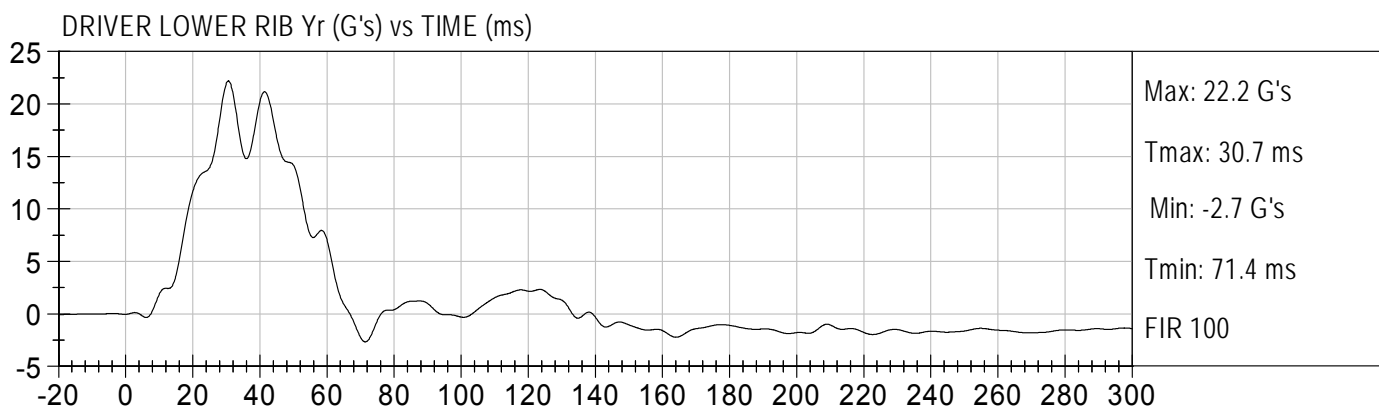
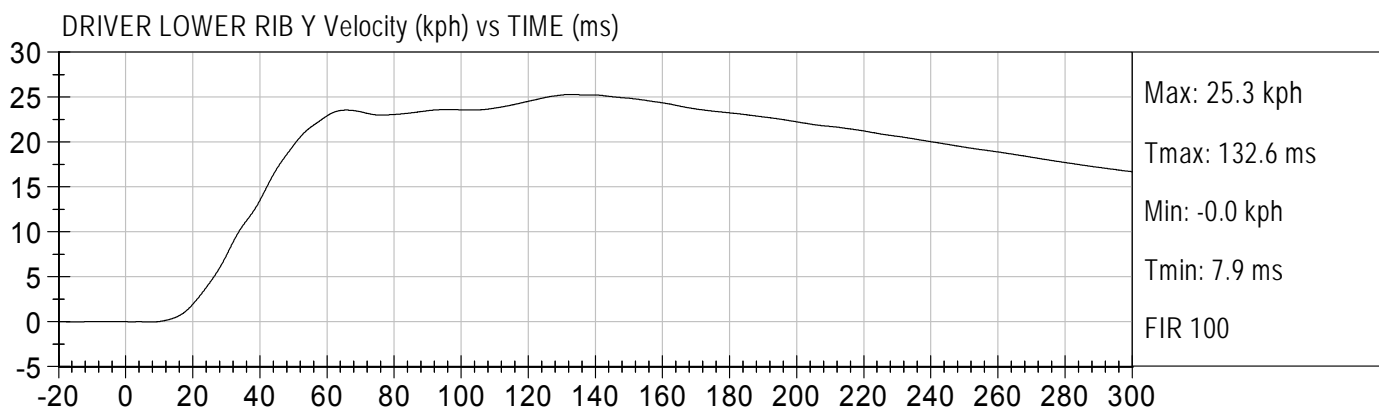
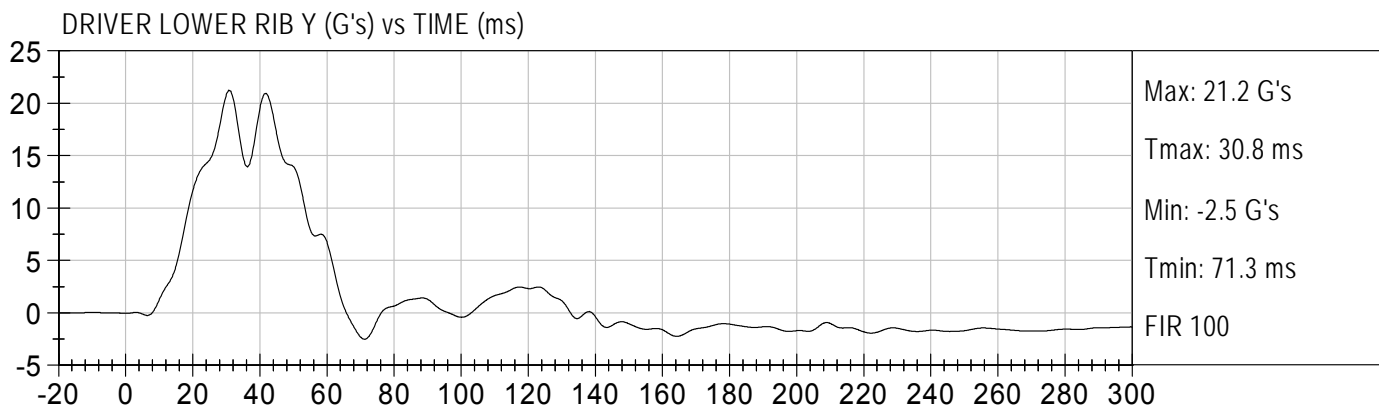
Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)





FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)

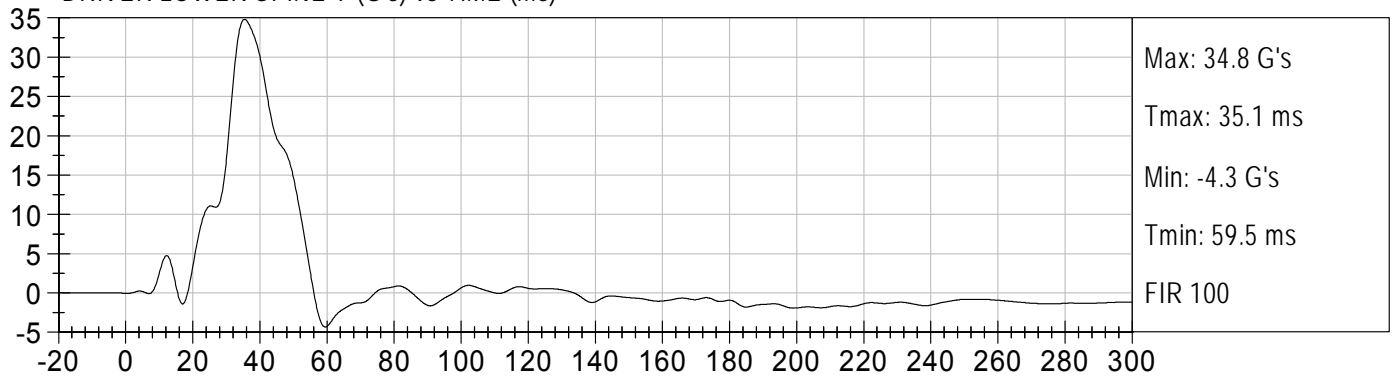




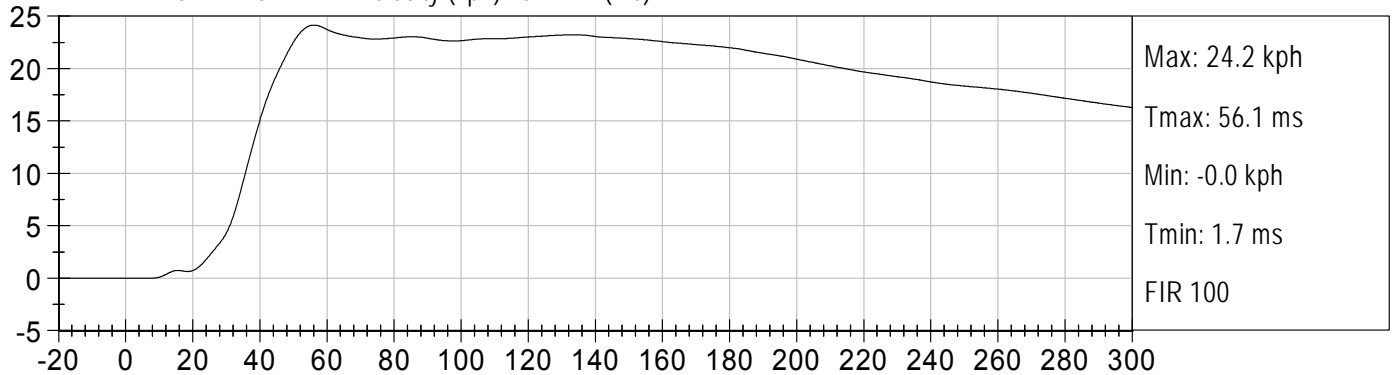
FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)

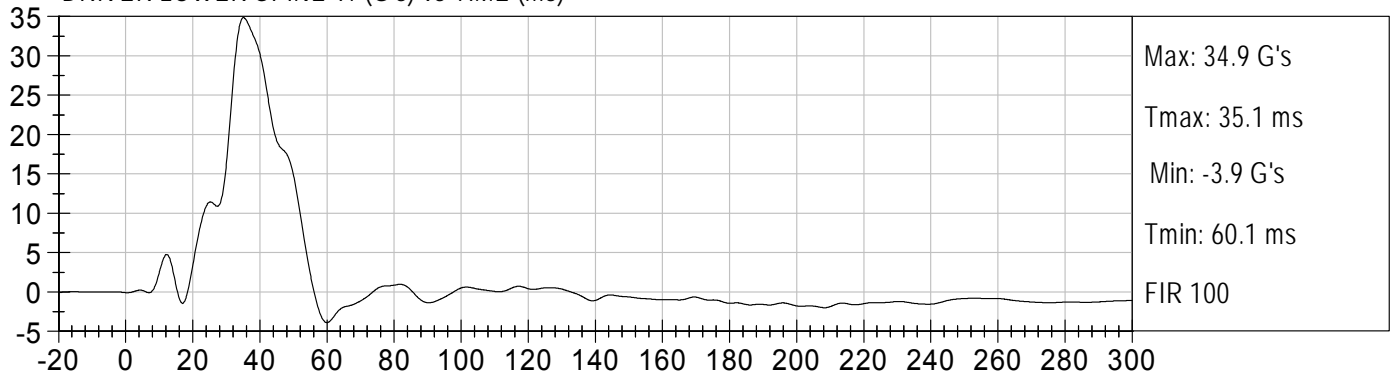
DRIVER LOWER SPINE Y (G's) vs TIME (ms)



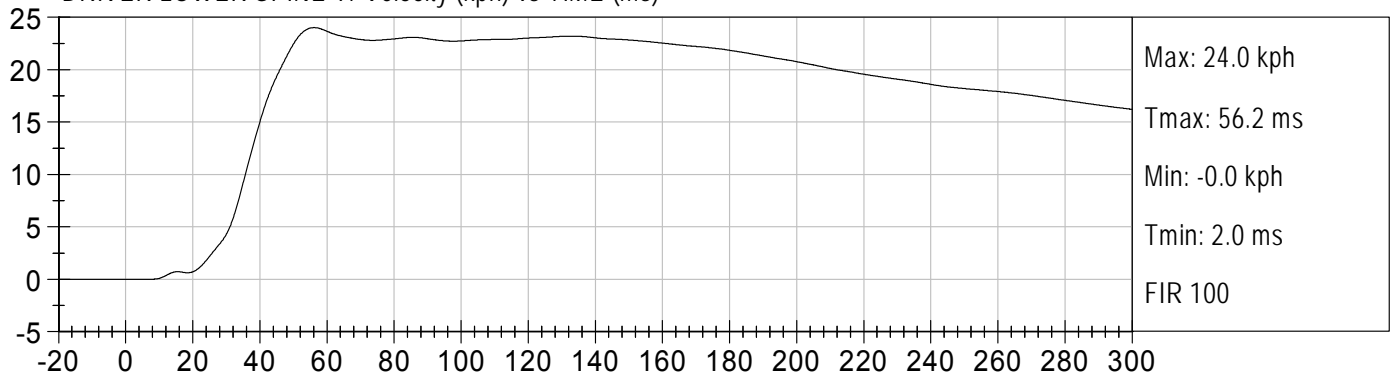
DRIVER LOWER SPINE Y Velocity (kph) vs TIME (ms)



DRIVER LOWER SPINE Yr (G's) vs TIME (ms)



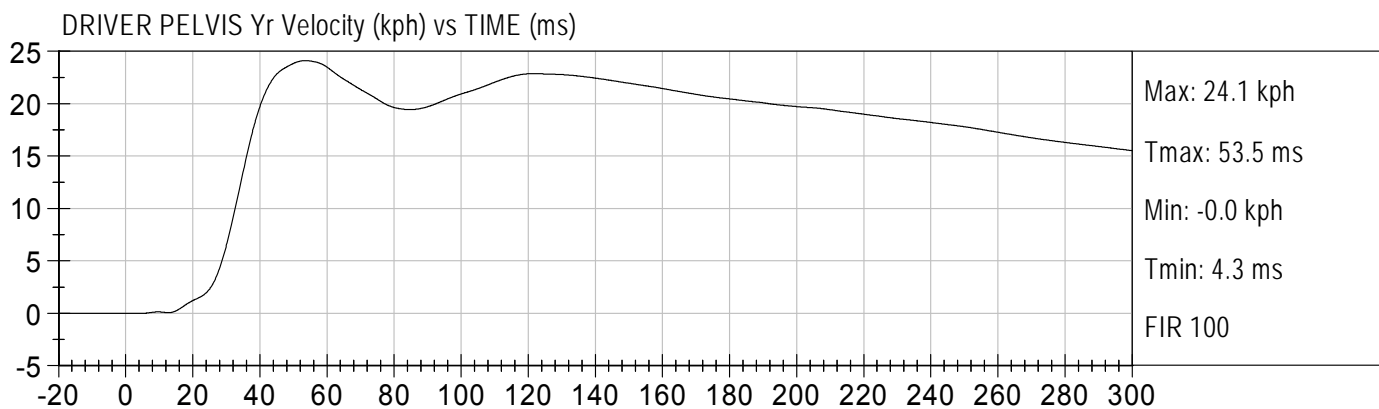
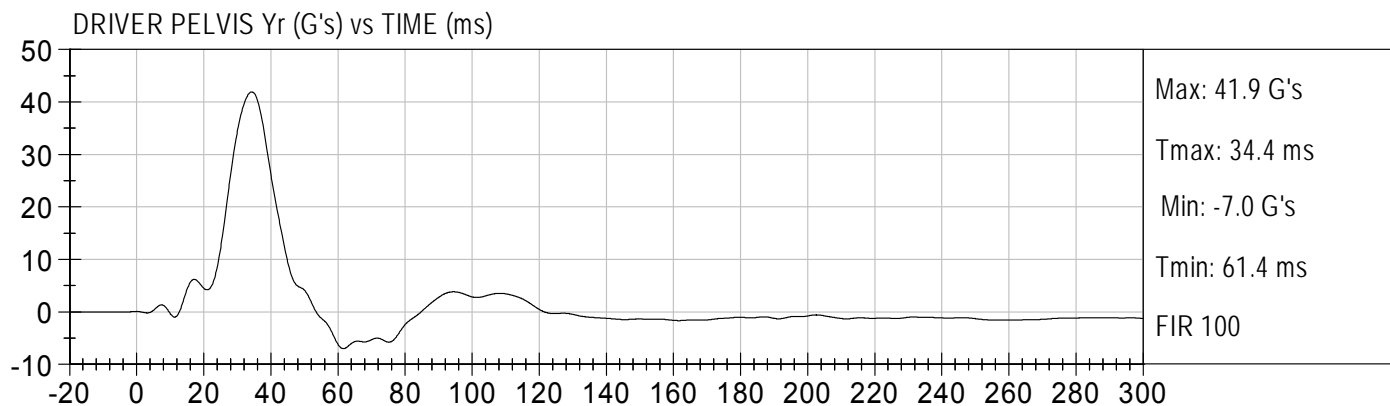
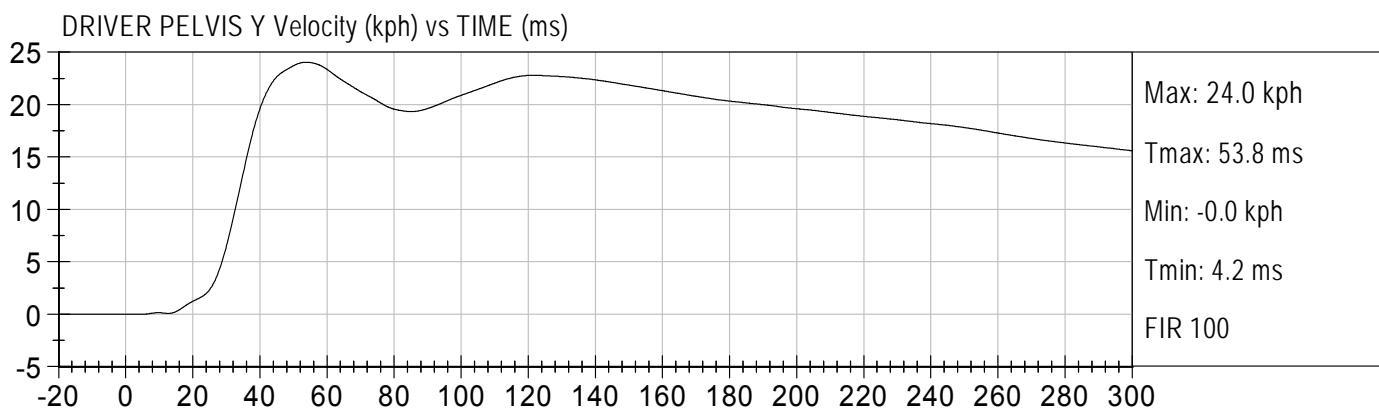
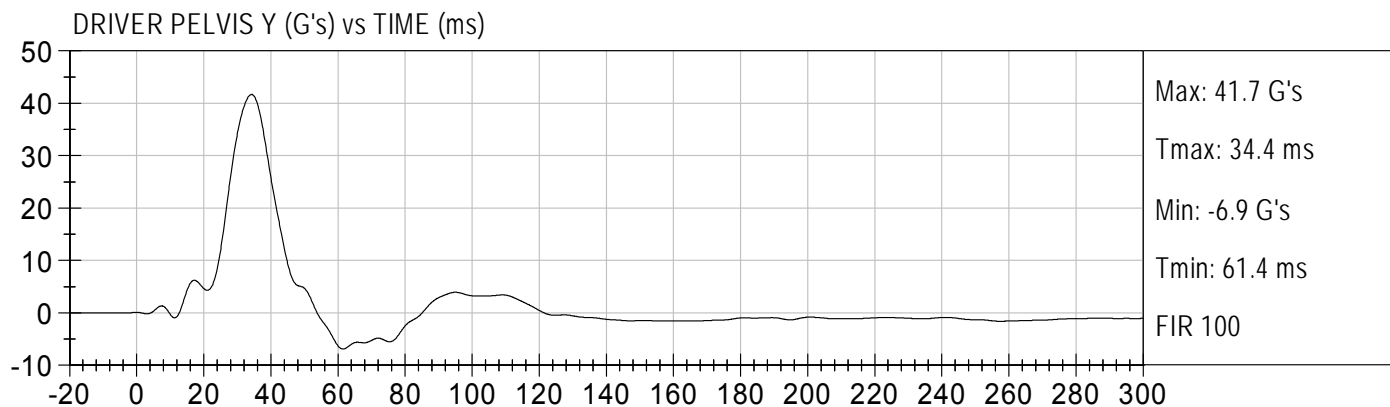
DRIVER LOWER SPINE Yr Velocity (kph) vs TIME (ms)





FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

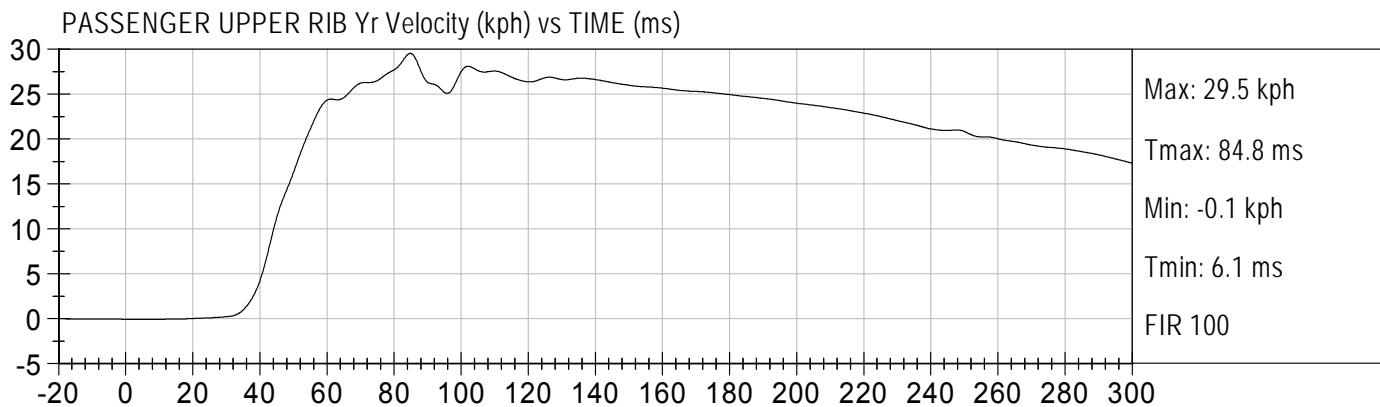
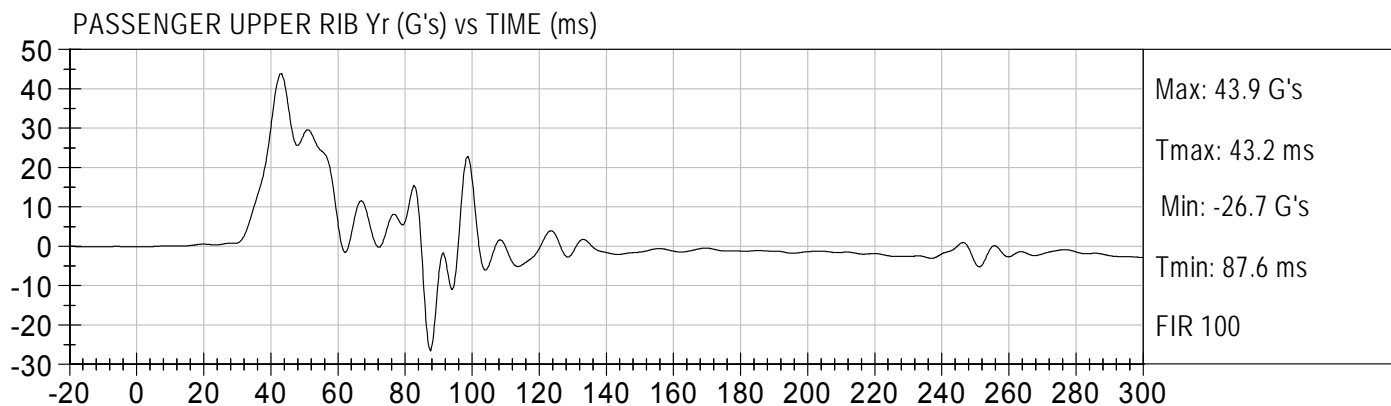
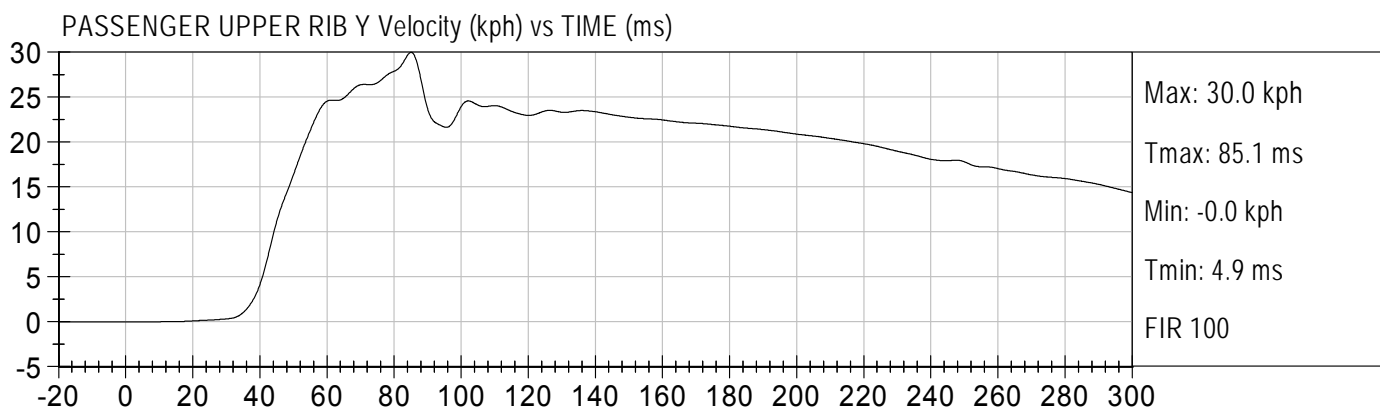
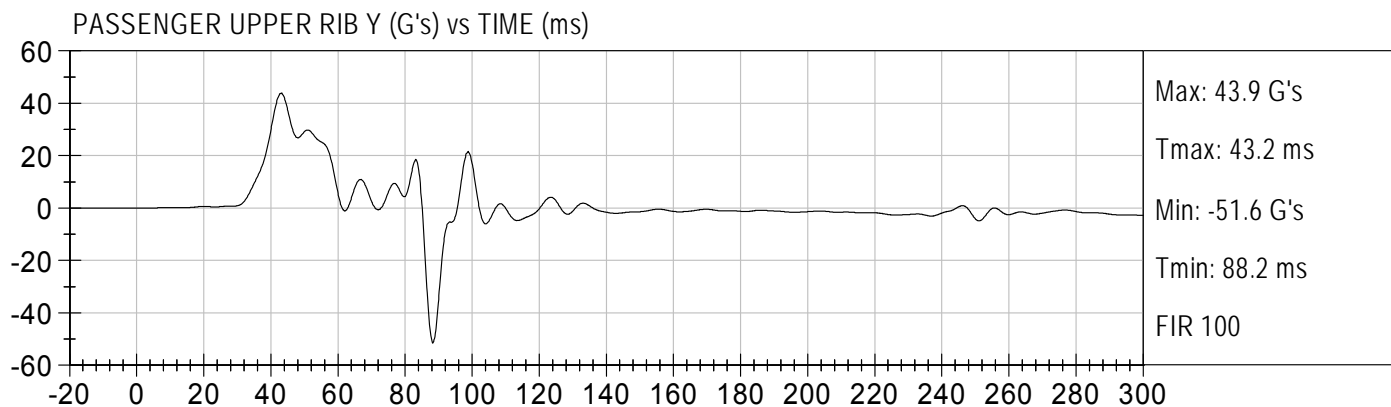
Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)





FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

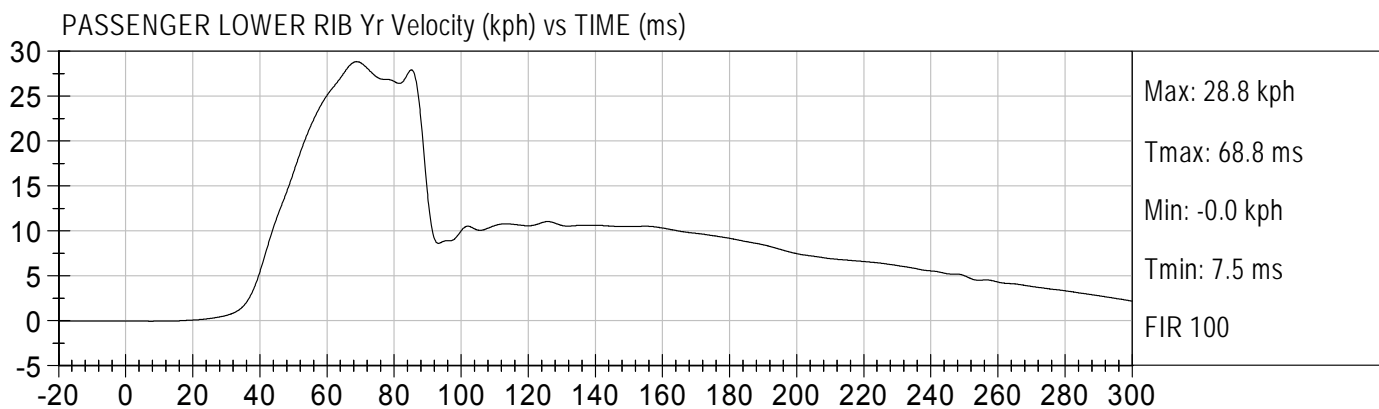
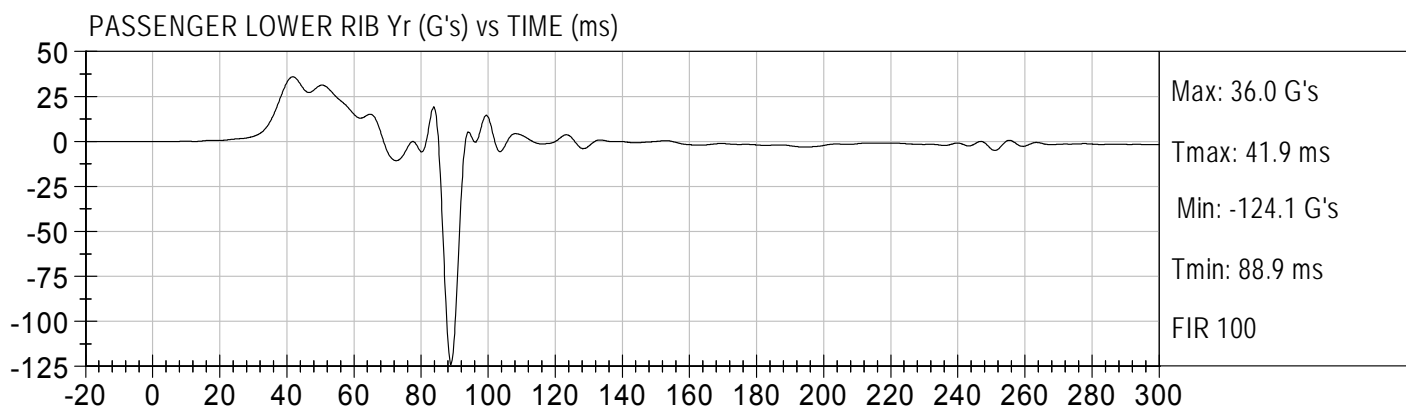
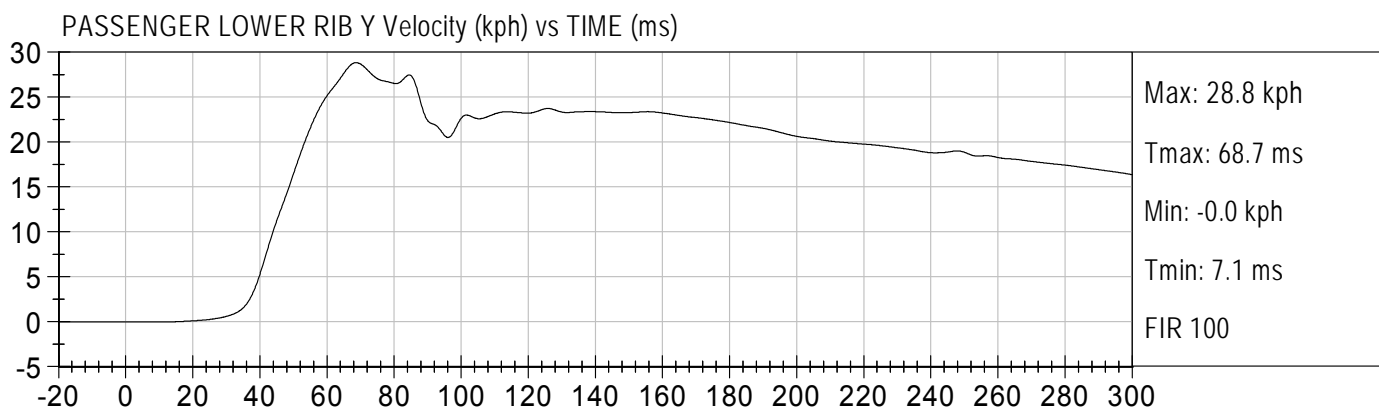
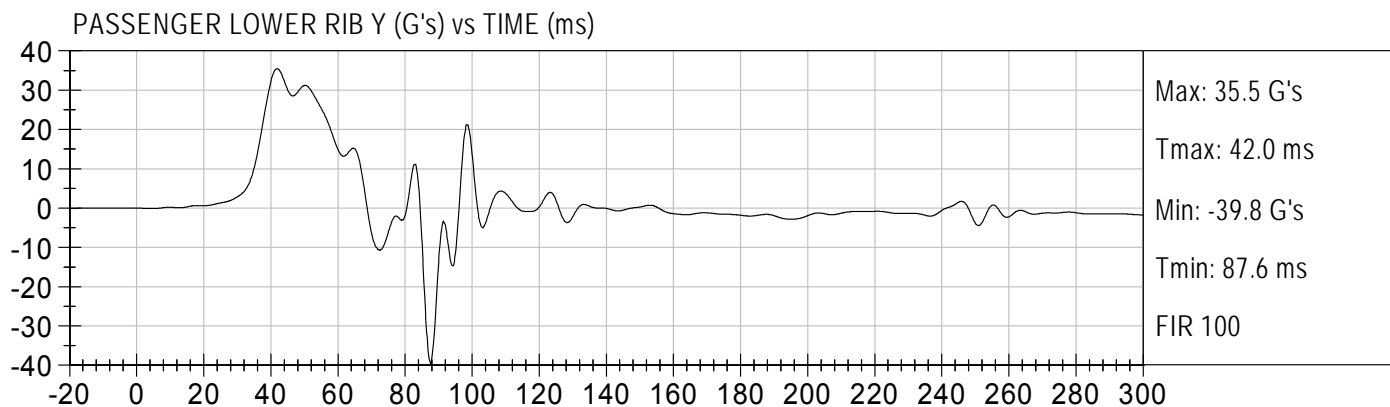
Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)





FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

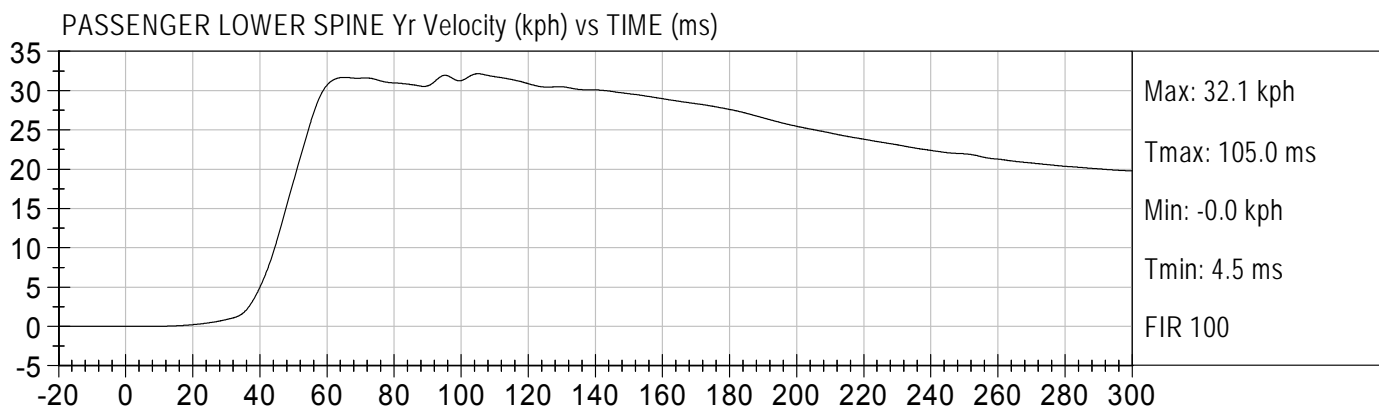
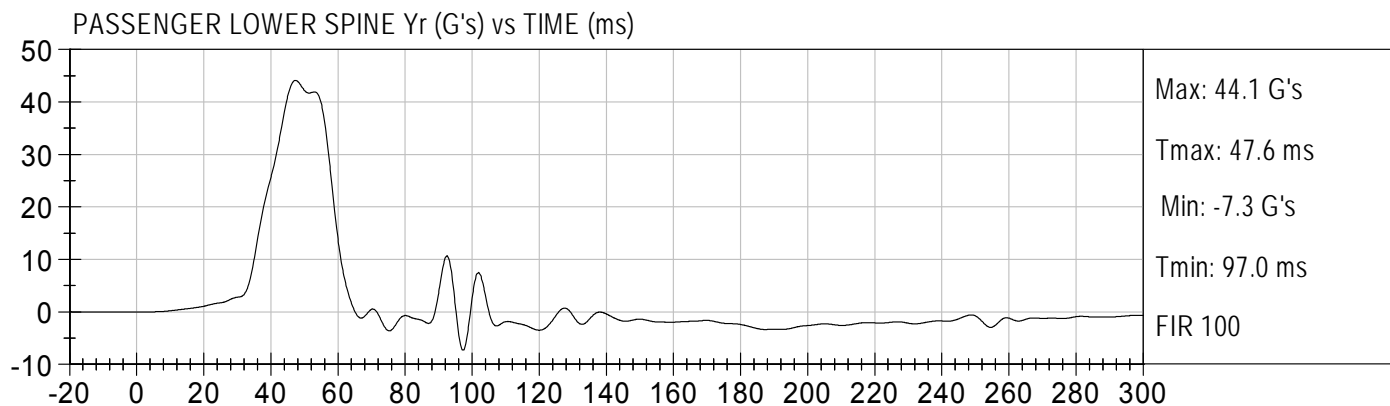
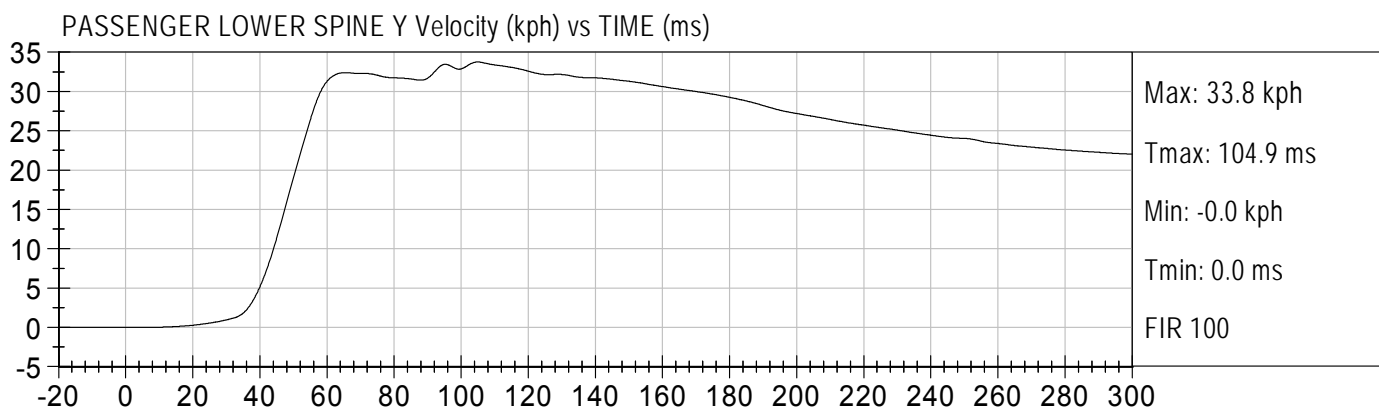
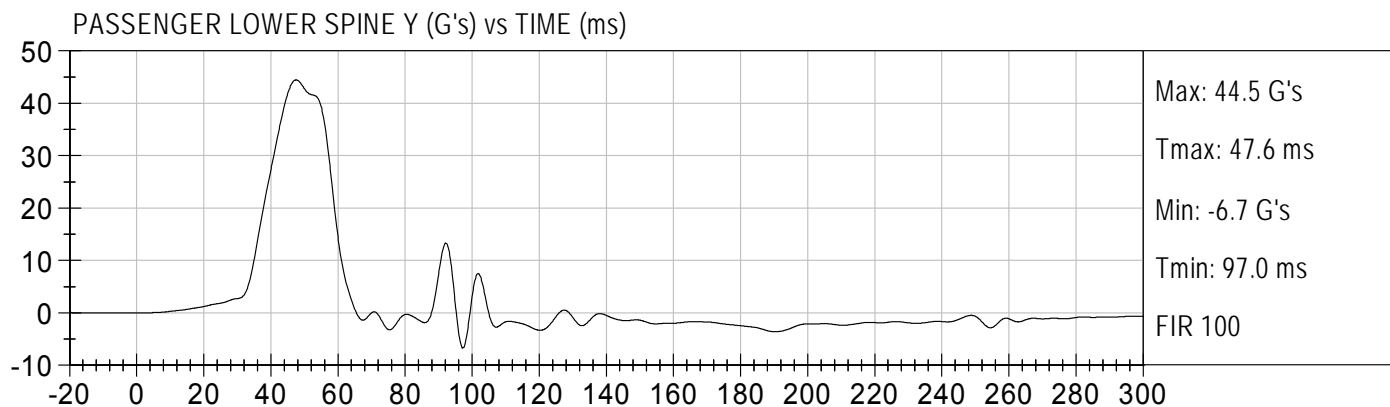
Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)





FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

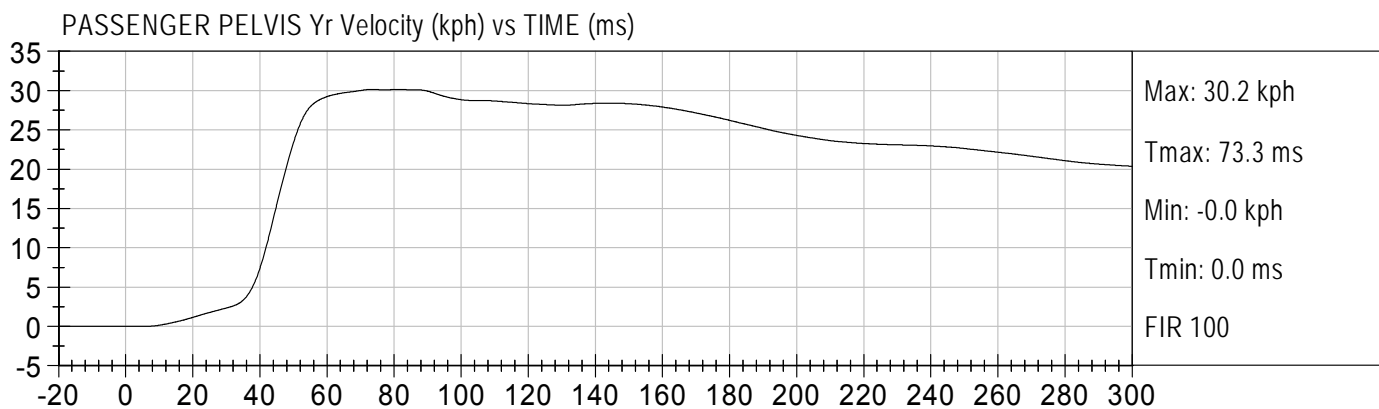
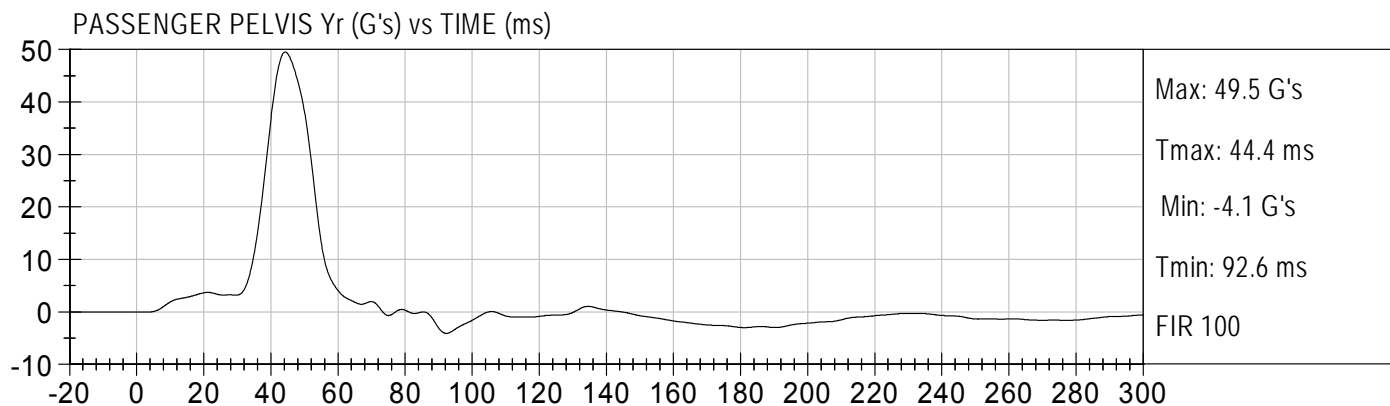
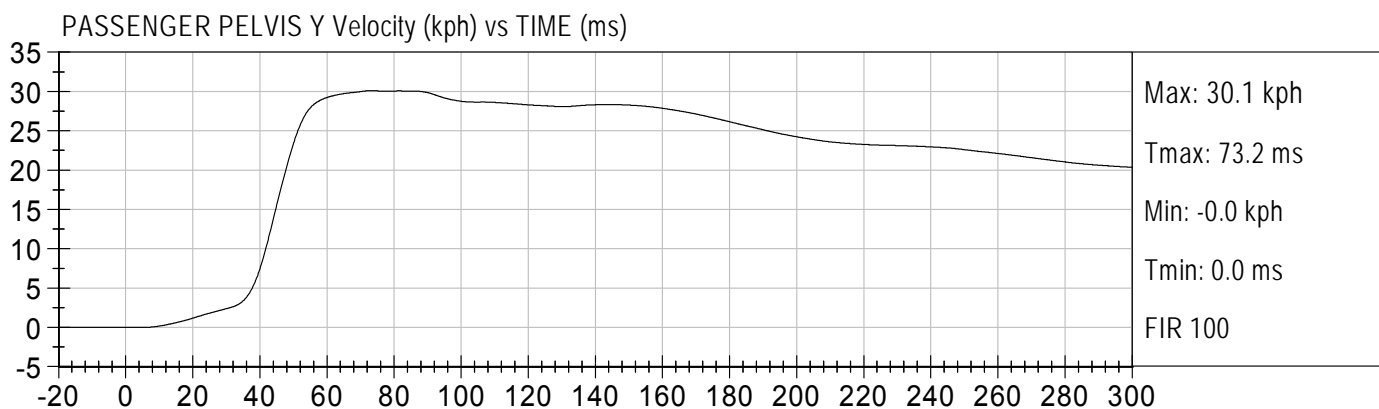
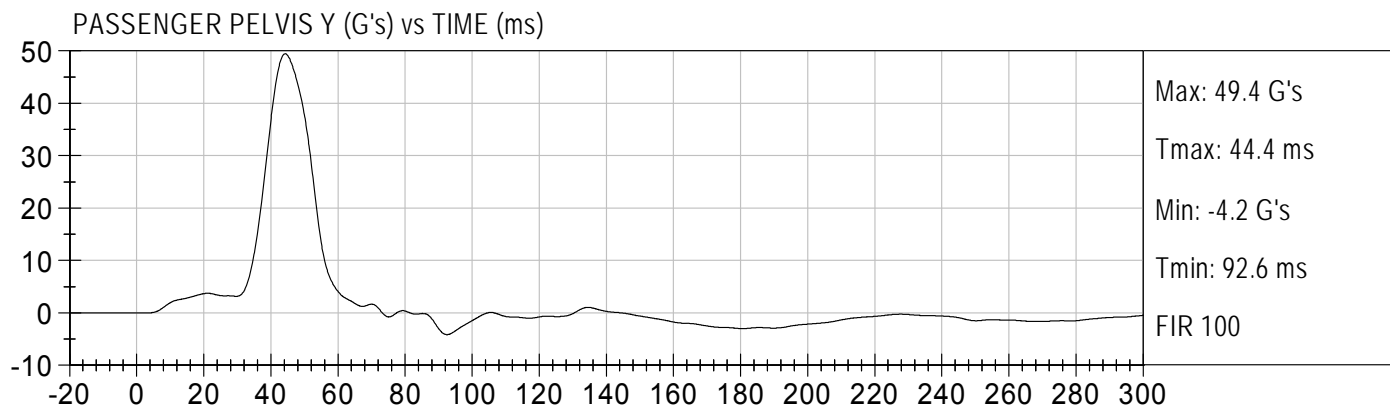
Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)





FMVSS 214 LEFT SIDE
2009 MERCURY SABLE

Test Date: 04/01/2009
Speed: 32.9 mph (52.9 km/h)



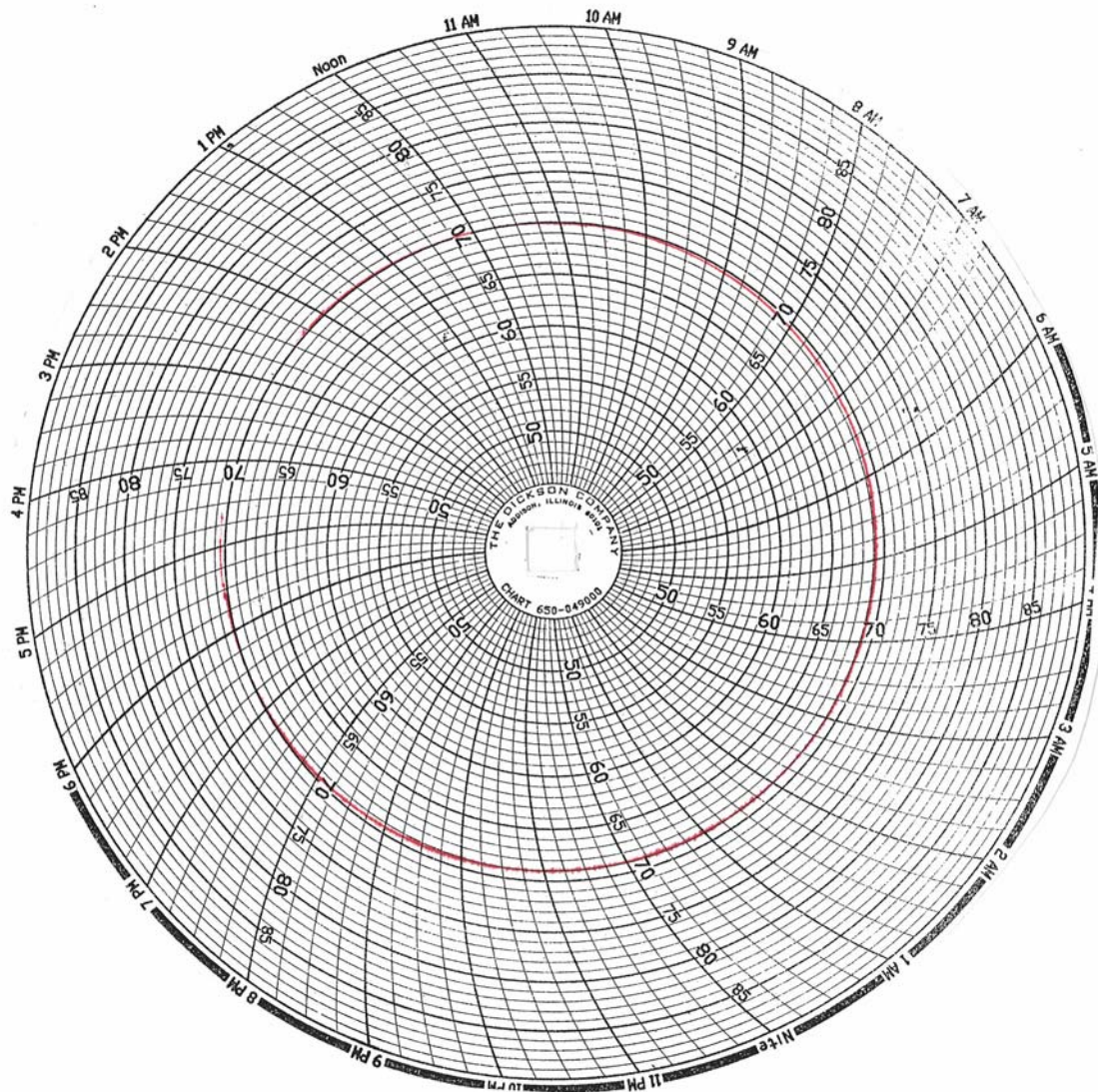
APPENDIX C
DUMMY CALIBRATION DATA

VEHICLE AND DUMMY TEMPERATURE

Test Vehicle: 2009 Mercury Sable
Test Program: FMVSS 214

NHTSA No. C90207
Test Date: 4/1/2009

Test Time: 10:15 a.m.



CERTIFICATION DATA

Dummy Serial Number: 037

Calibration Test Results Summary

Dummy Serial Number: 037

Pre-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID Calibration Data Sheet
Side Impact Dummy
External Measurements

ATD Serial No: 037

Test I.D: D0956

Tested Parameter	Units	Specification	Result	Pass/Fail
SH - Seated Height	mm	889 - 909	904	Pass
RH - Rib Height	mm	501 - 521	507	Pass
HP - Hip Pivot Height	mm	99 ref.	99	Pass
RD - Rib from Back Line	mm	229 - 241	234	Pass
KV - Knee Pivot to Back Line	mm	511 - 526	523	Pass
SW - Knee Pivot to Floor	mm	490 - 505	493	Pass
HW - Hip Width	mm	356 - 391	366	Pass
Overall Test Results			Pass	


Laboratory Technician


Approved By

3/18/2009
Test Date

SID Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test


ATD Serial No: 037

Test I.D: D09642

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Probe Velocity	m/s	4.22 - 4.31	4.30	Pass
Upper Rib	G's	37 - 46	42	Pass
Lower Rib	G's	37 - 46	39	Pass
Lower Spine	G's	15 - 22	21	Pass
Overall Test Results				Pass


Laboratory Technician

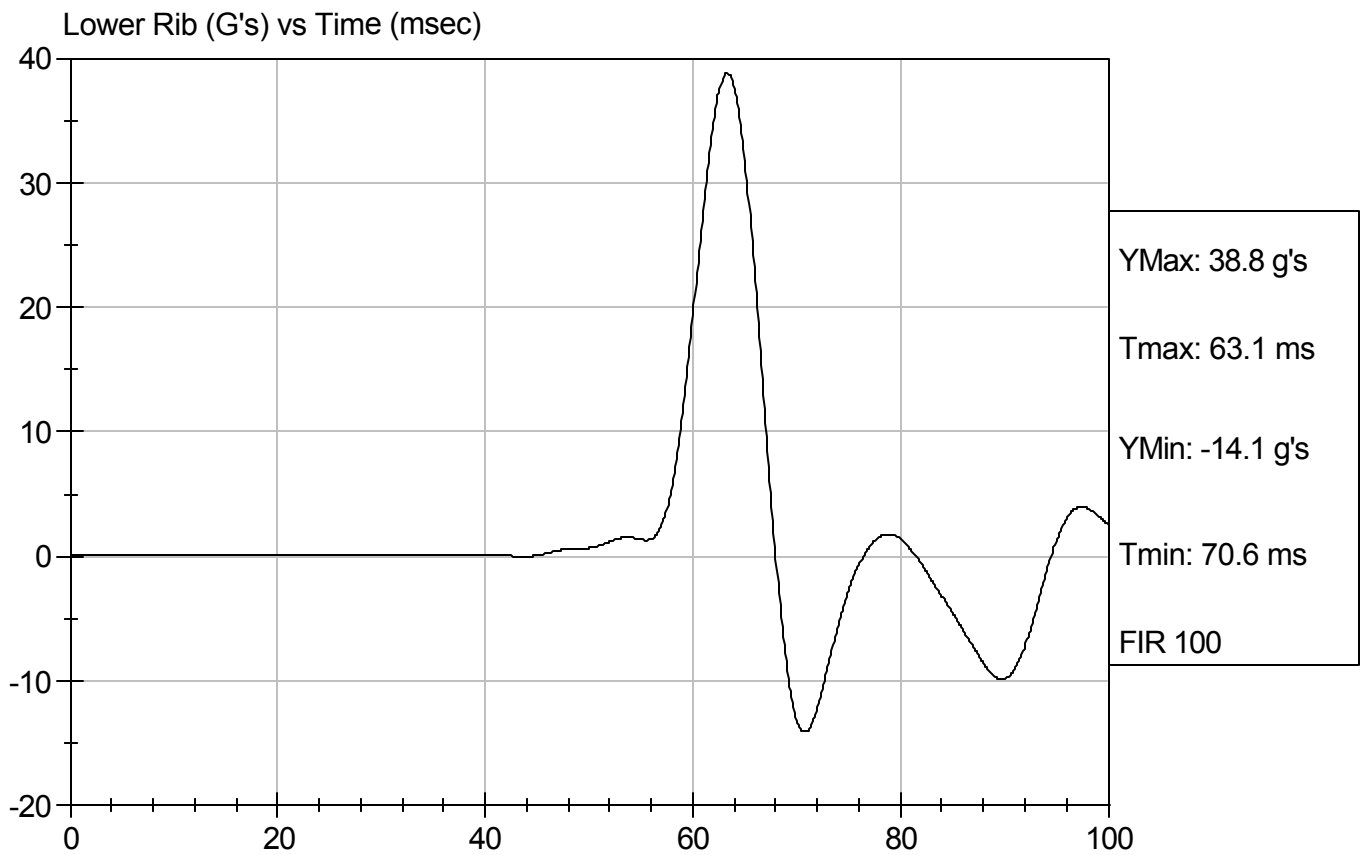
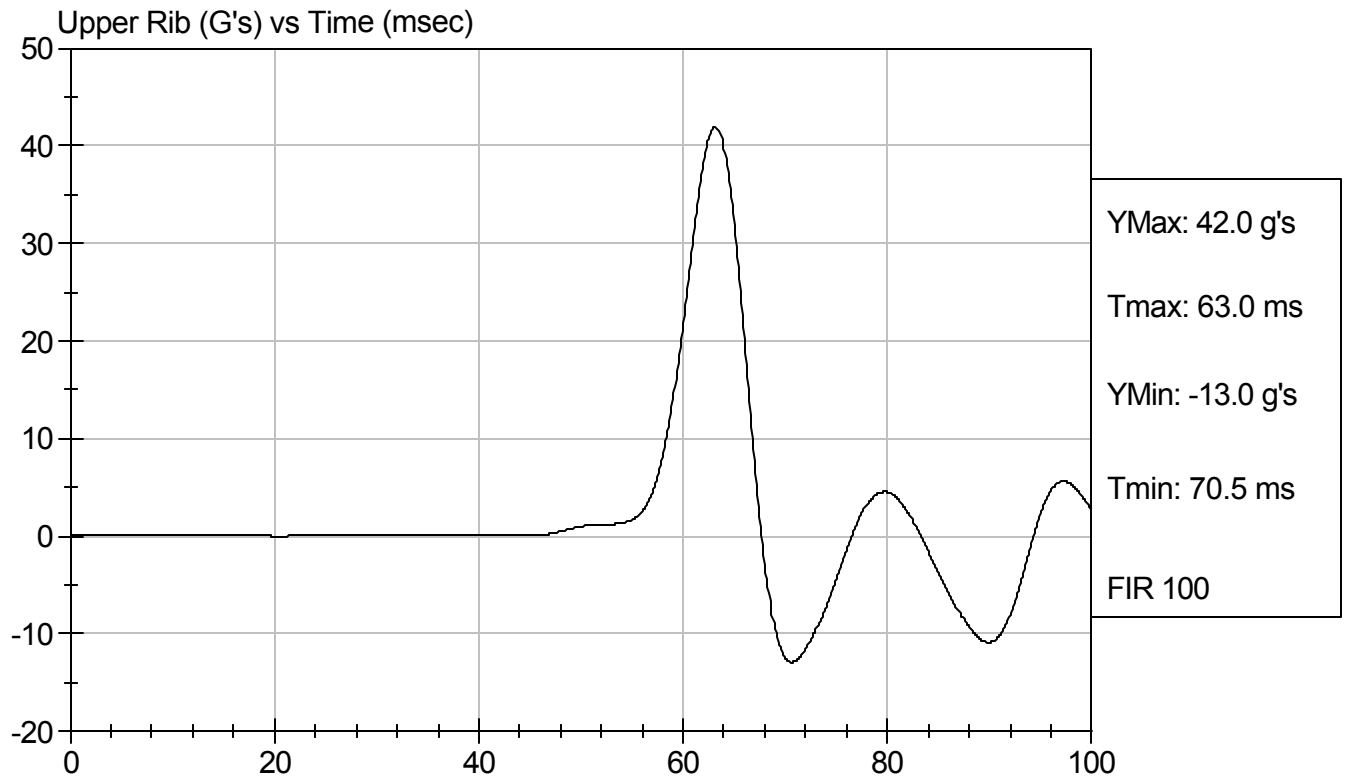
3/24/09
Test Date


Approved By



Test Desc: Thorax Impact
Component ID: D09642

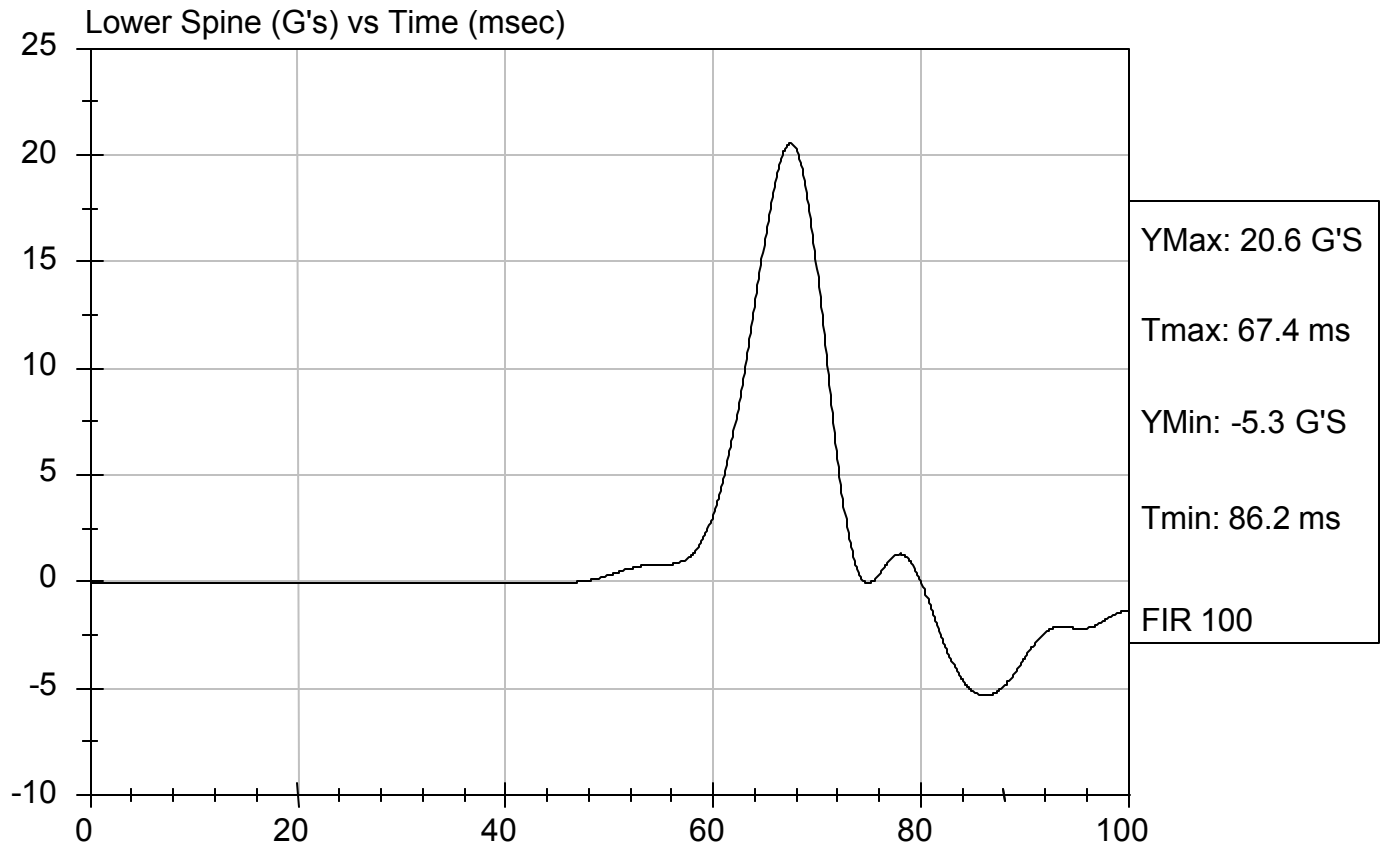
Test Date: 3/24/09
Speed: 14.12 ft/sec, 4.30 m/sec





Test Desc: Thorax Impact
Component ID: D09642

Test Date: 3/24/09
Speed: 14.12 ft/sec, 4.30 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

ATD Serial No: 037

Test I.D: D09643

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Pelvis Acceleration	G's	40 - 60	43	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

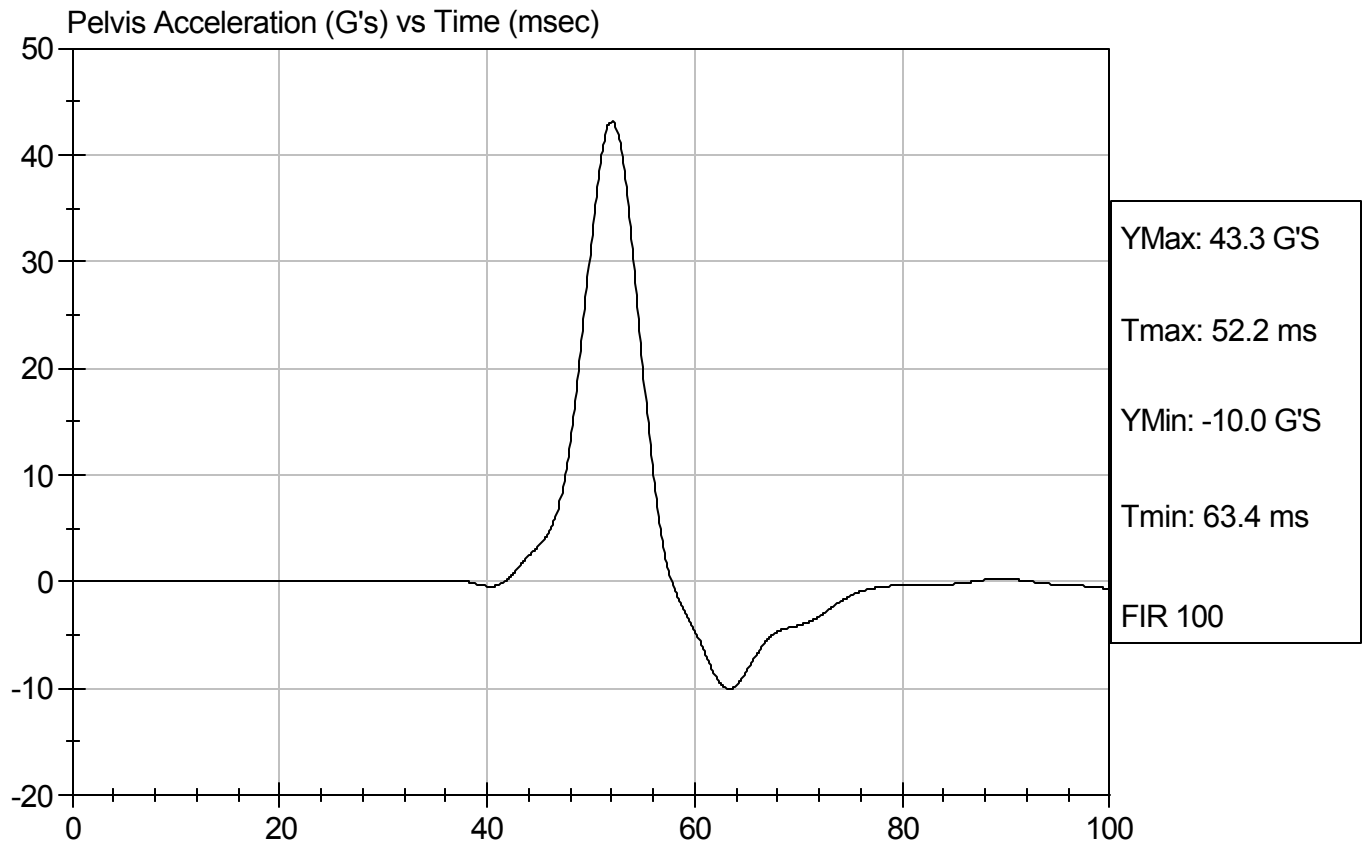
David Winkelbauer
Approved By

3/24/09
Test Date



Test Desc: Pelvis Impact
Component ID: D09643

Test Date: 3/24/09
Speed: 14.12 ft/sec, 4.30 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 037

Test I.D: D09644

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	35	Pass
Force At 12.7 mm	N	104 -162	133	Pass
Force At 19 mm	N	163 - 222	185	Pass
Force At 25.4 mm	N	222 - 280	250	Pass
Force At 33 mm	N	325 - 391	342	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

3/24/09
Test Date

David Winkelbauer
Approved By

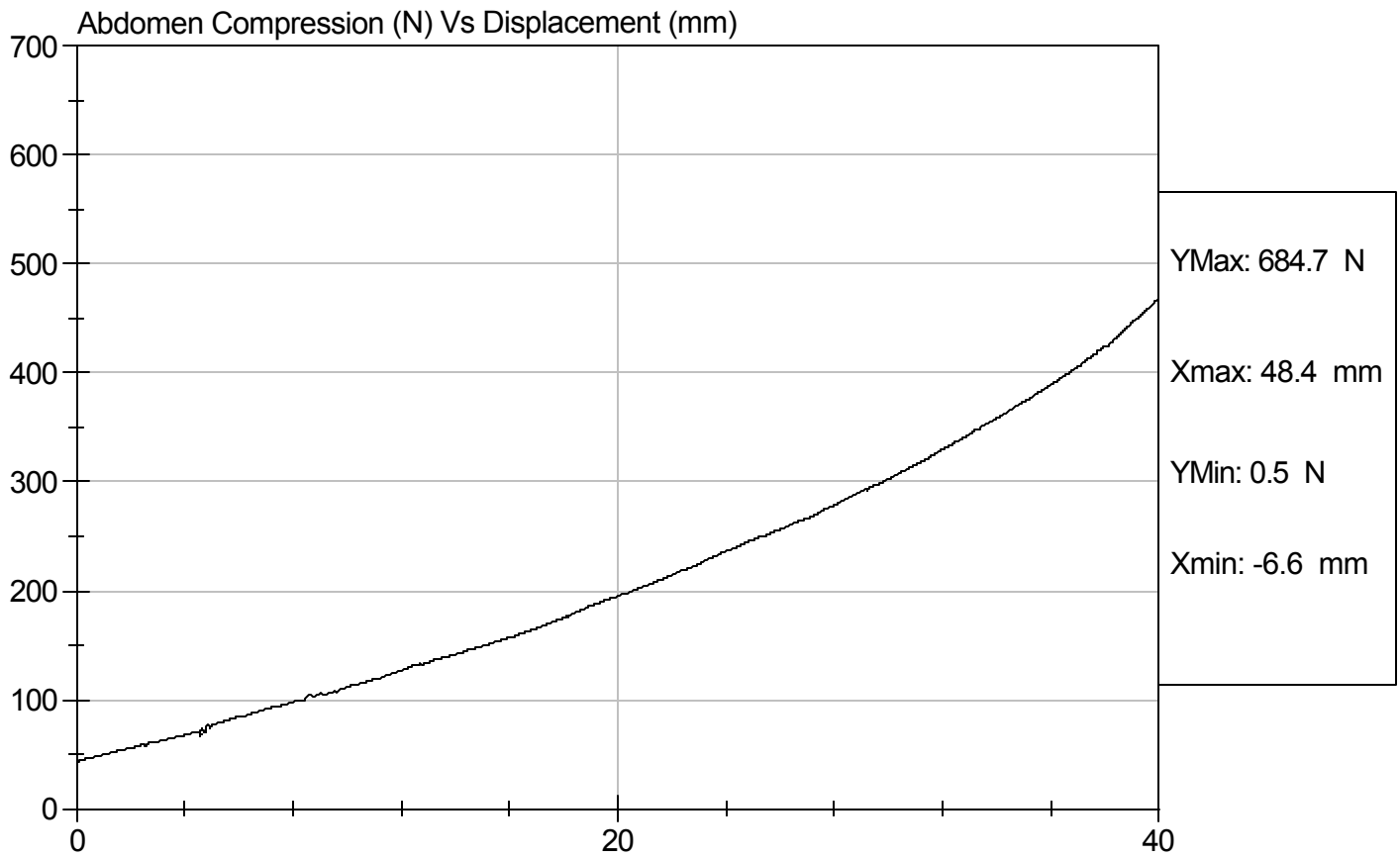


Test Description: Abdomen Compression

Test Date: 3/24/09

Component: D09644

Speed: 0 ft/sec, 0 m/sec




SID Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 037

Test I.D: D09645

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	38	Pass
Force At 0 deg	N	0 - 26.7	0	Pass
Force At 20 deg	N	97.9 - 151.2	114.3	Pass
Force At 30 deg	N	151.2 - 204.6	163.8	Pass
Force At 40 deg	N	204.6 - 258.0	224.5	Pass
Return Angle	Deg	12 Maximum	4	Pass
Overall Test Results			Pass	


Laboratory Technician


Approved By

3/24/09
Test Date

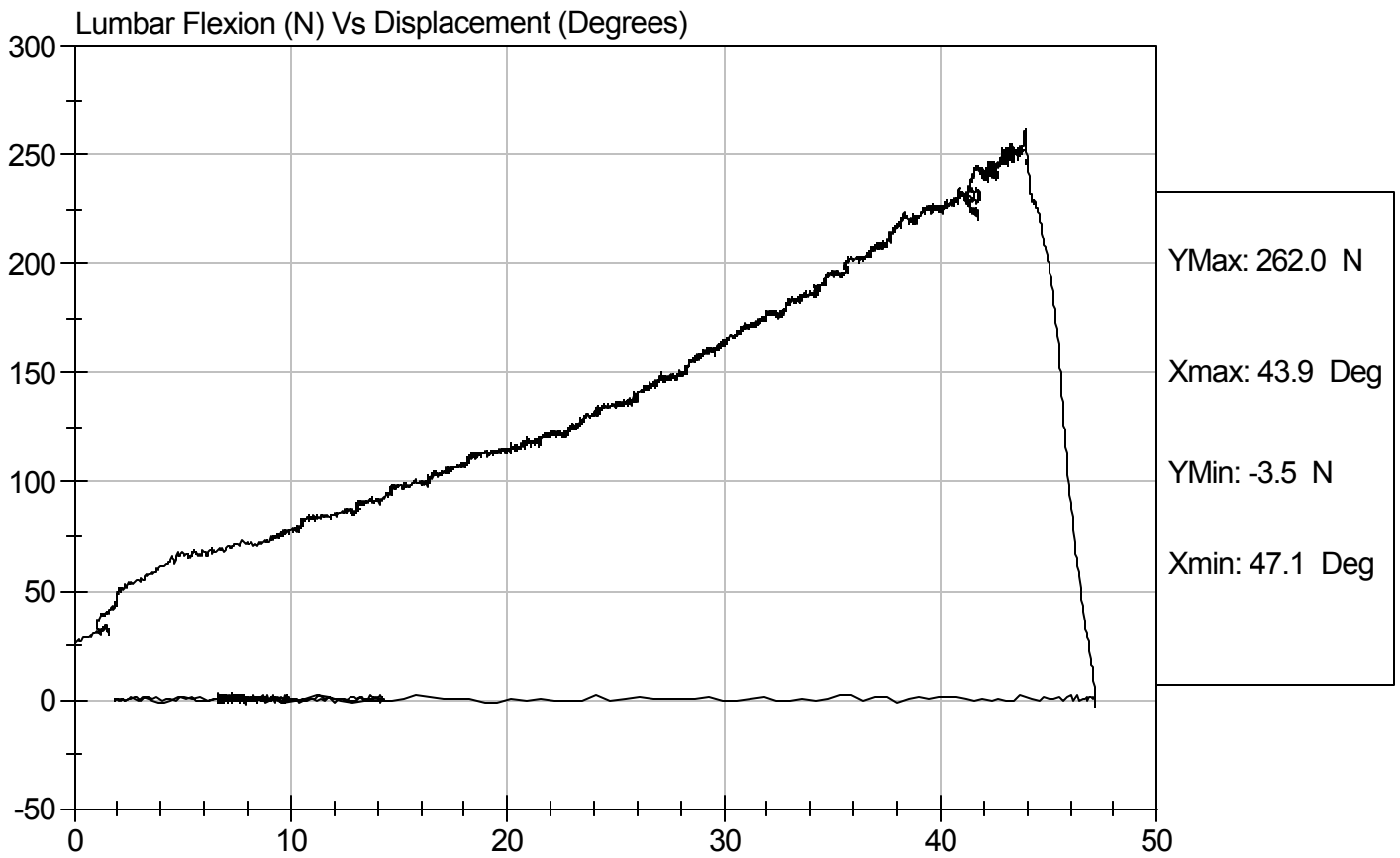


Test Description: Lumbar Flexion

Test Date: 3/24/09

Component: D09645

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Thoracic Shock Absorber Calibration

ATD Serial No: 037

Test I.D: D09568

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	18.9 to 25.5	21.3	Pass
Laboratory Relative Humidity		%	10 to 70	33	Pass
Velocity 3.05 m/s	Force	N	836 - 1125	963	Pass
	Displacement	mm	30 - 35	34.1	Pass
Velocity 4.27 m/s	Force	N	1730 - 2099	1,779	Pass
	Displacement	mm	32 - 37	36.8	Pass
Velocity 6.1 m/s	Force	N	3741 - 4448	3,766	Pass
	Displacement	mm	33 - 40	38.4	Pass
Overall Test Results					Pass

Jessica Hall
Laboratory Technician

3/18/09
Test Date

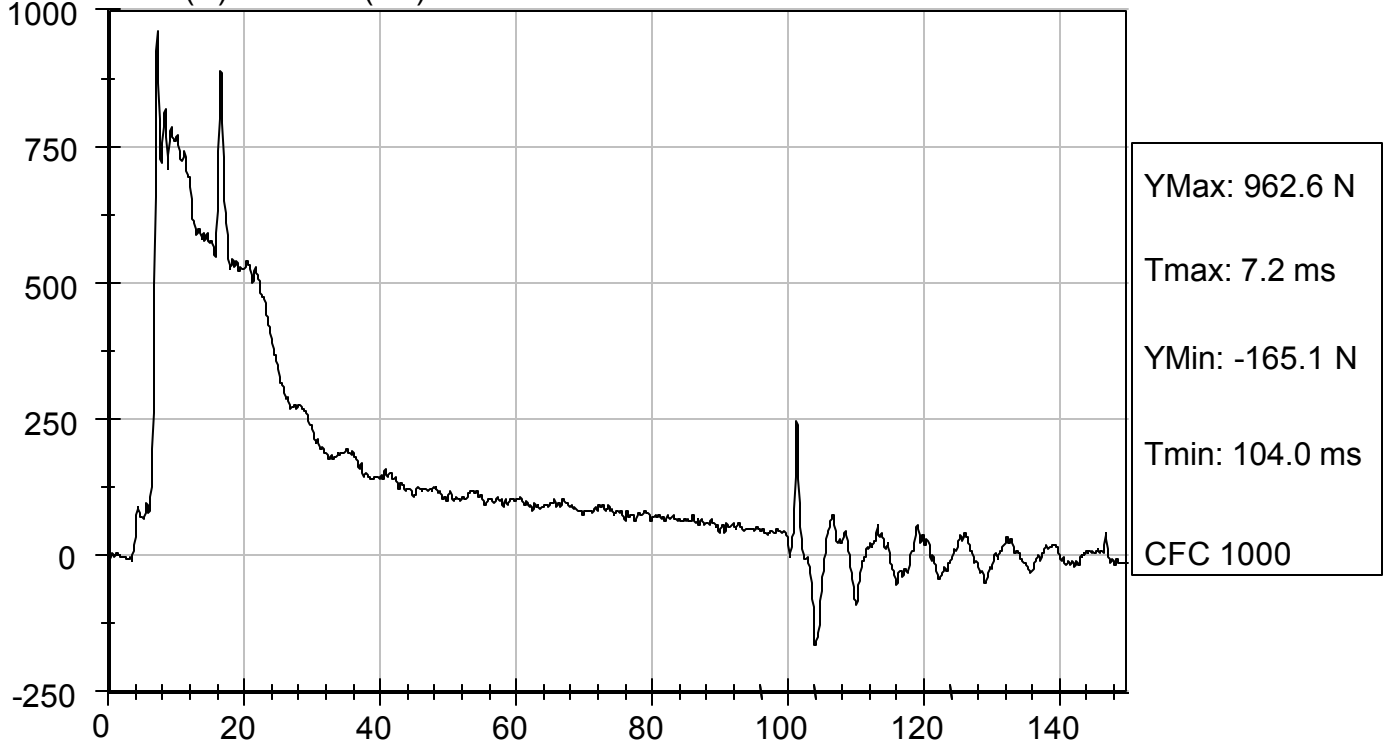
David Winkelbauer
Approved By



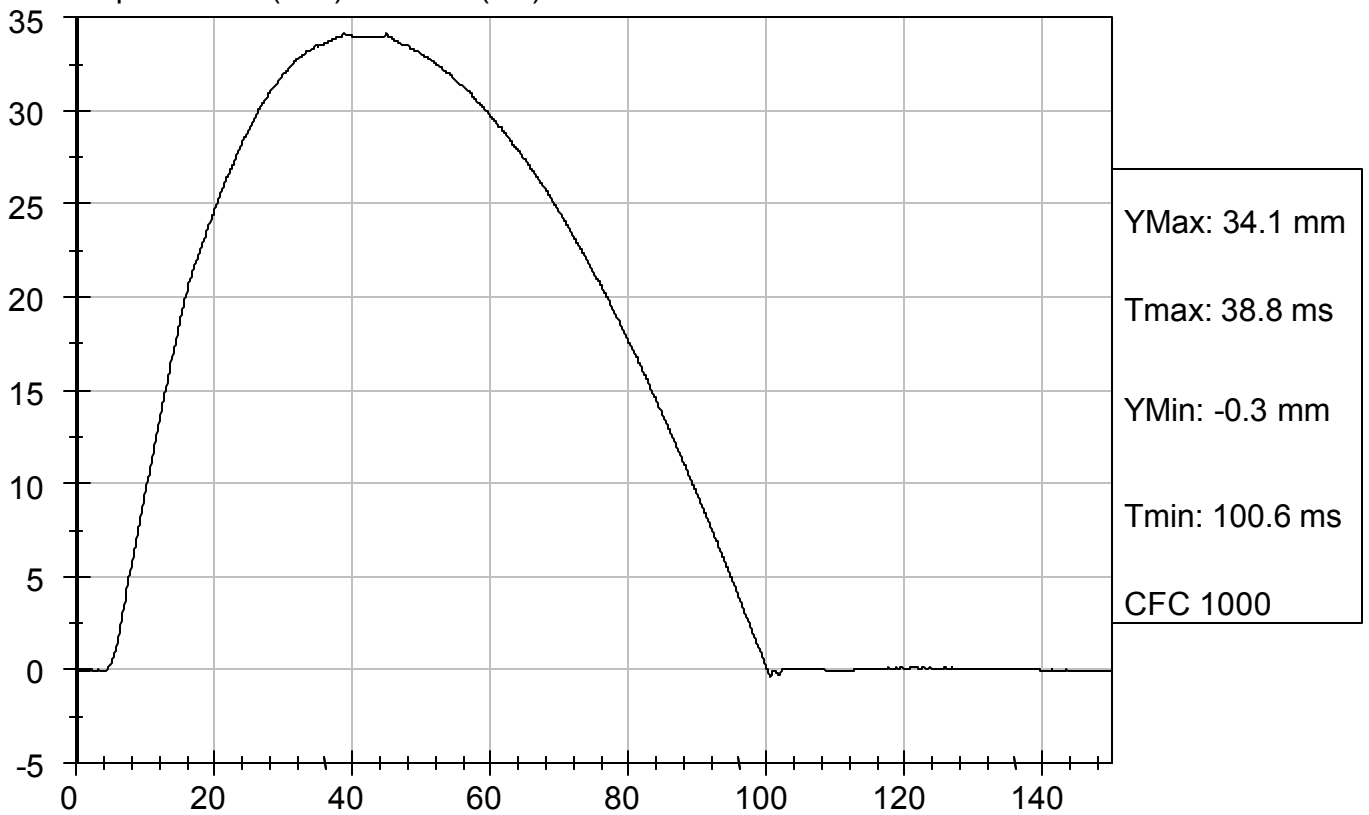
Test Desc: Dampener Impact
Component ID: D09566

Test Date: 3/18/09
Speed: 10 ft/sec, 3.05 m/sec

Force (N) vs TIME (ms)



Displacement (mm) vs TIME (ms)

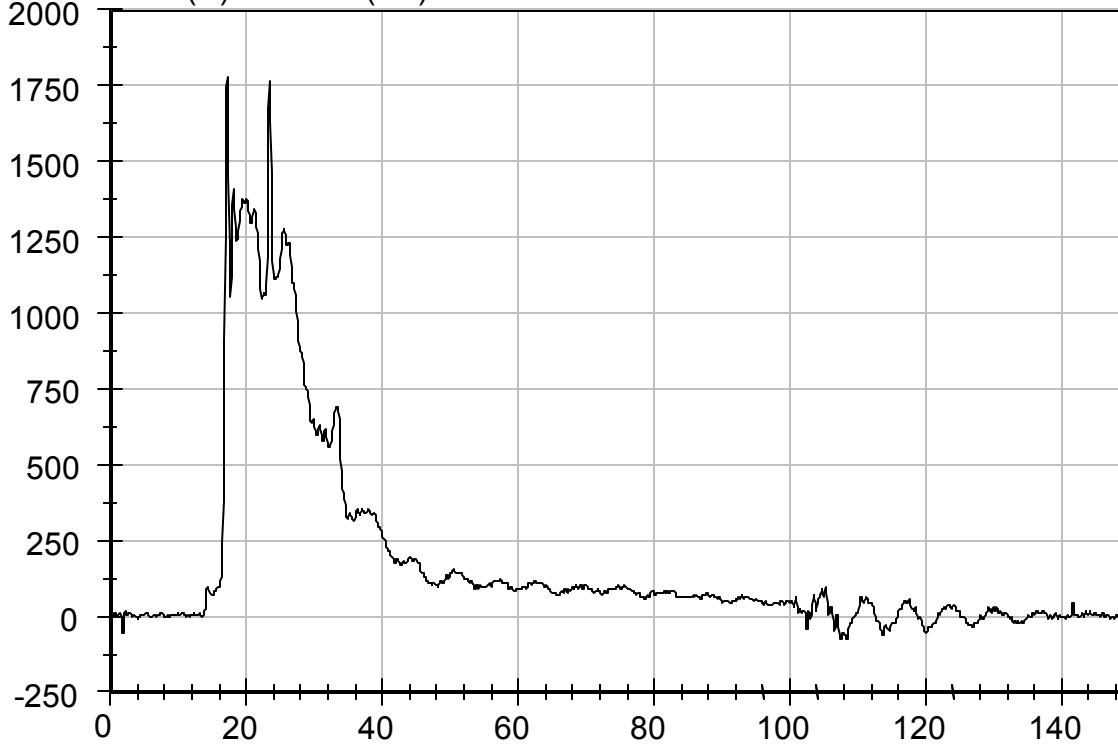




Test Desc: Dampener Impact
Component ID: D09567

Test Date: 3/18/09
Speed: 14 ft/sec, 4.27 m/sec

Force (N) vs TIME (ms)



YMax: 1778.7 N

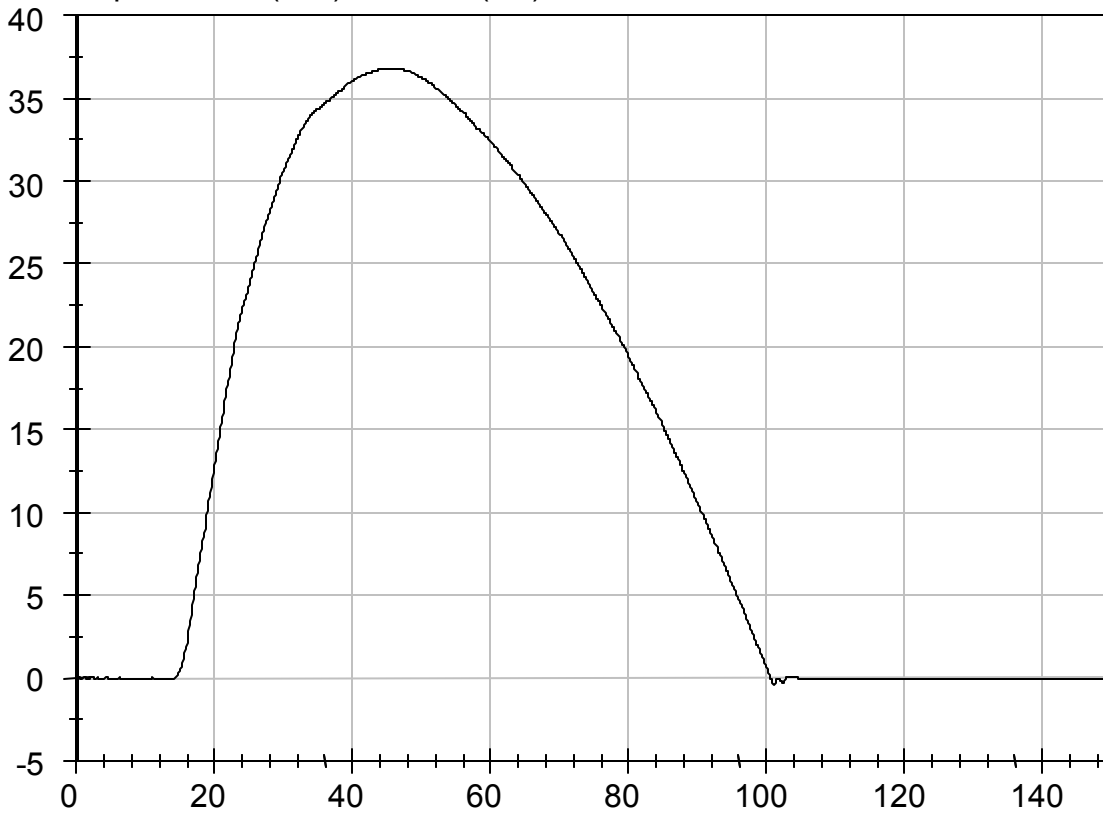
Tmax: 17.2 ms

YMin: -76.2 N

Tmin: 107.4 ms

CFC 1000

Displacement (mm) vs TIME (ms)



YMax: 36.8 mm

Tmax: 46.1 ms

YMin: -0.4 mm

Tmin: 101.1 ms

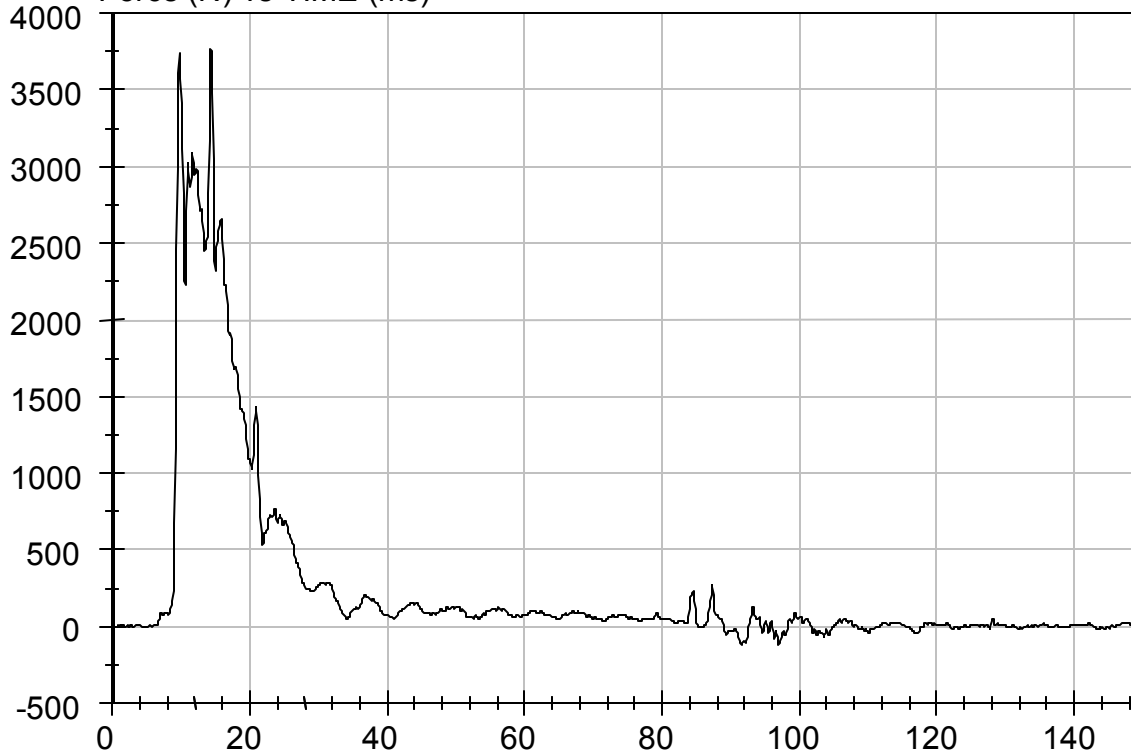
CFC 1000



Test Desc: Dampener Impact
Component ID: D09568

Test Date: 3/18/09
Speed: 20 ft/sec, 6.10 m/sec

Force (N) vs TIME (ms)



YMax: 3766.1 N

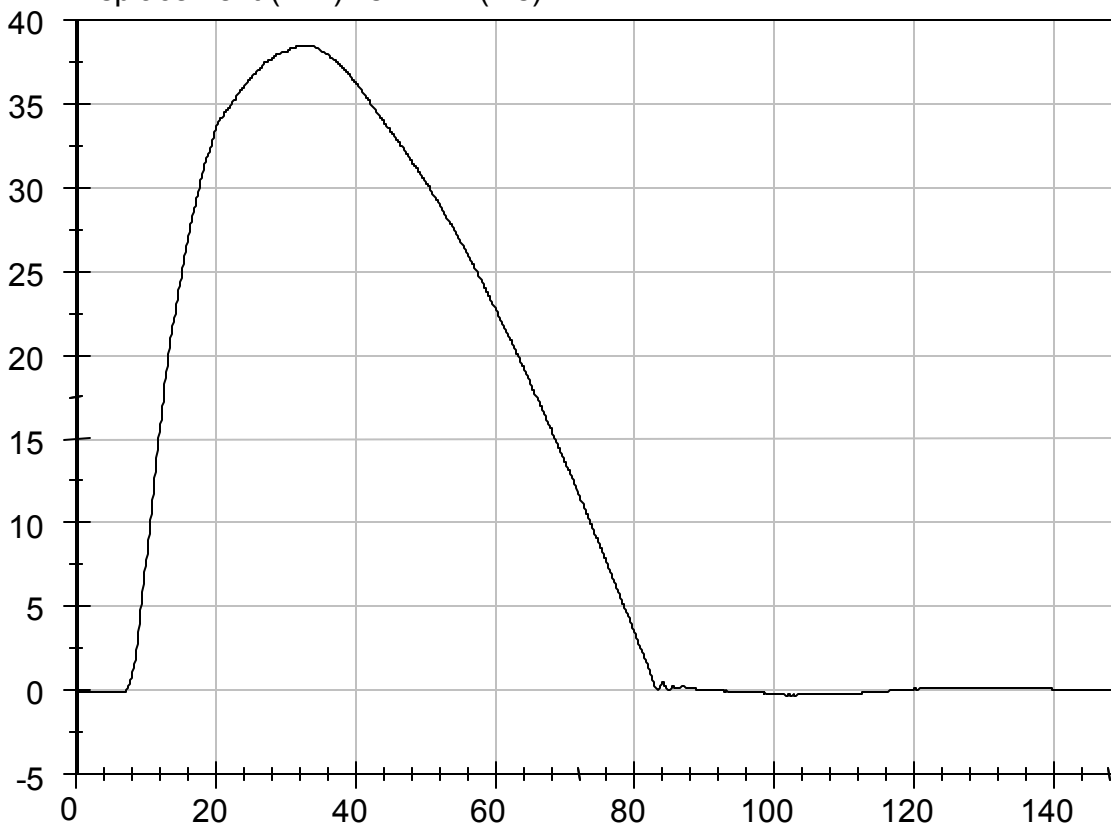
Tmax: 14.3 ms

YMin: -123.0 N

Tmin: 91.6 ms

CFC 1000

Displacement (mm) vs TIME (ms)



YMax: 38.4 mm

Tmax: 32.7 ms

YMin: -0.3 mm

Tmin: 102.5 ms

CFC 1000

Calibration Test Results Summary

Dummy Serial Number: 037

Post-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 037

Test I.D: D09722

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	22.4	Pass
Laboratory Relative Humidity	%	10 to 70	27	Pass
Probe Velocity	m/s	4.22 - 4.31	4.30	Pass
Upper Rib	G's	37 - 46	44	Pass
Lower Rib	G's	37 - 46	41	Pass
Lower Spine	G's	15 - 22	21	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

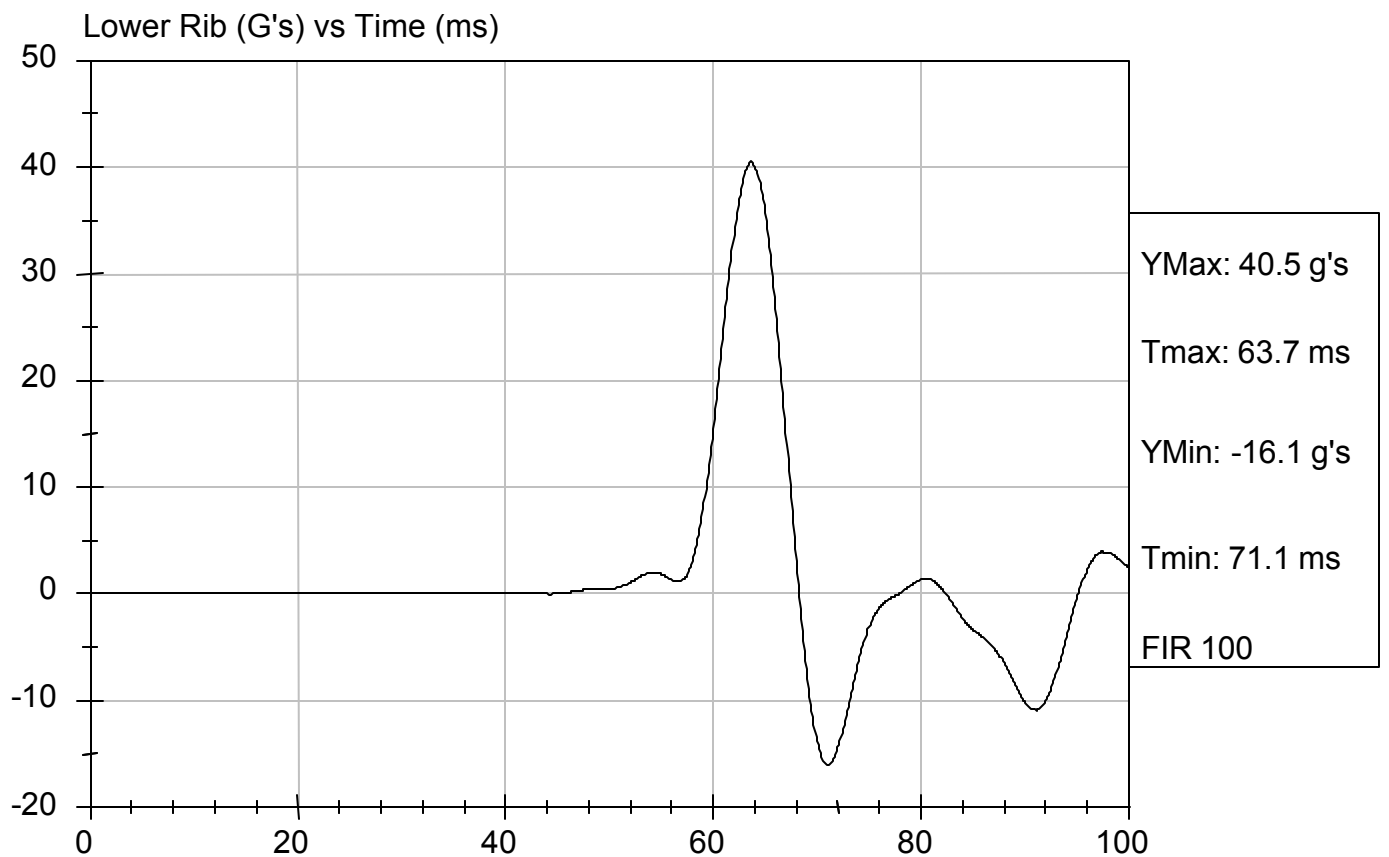
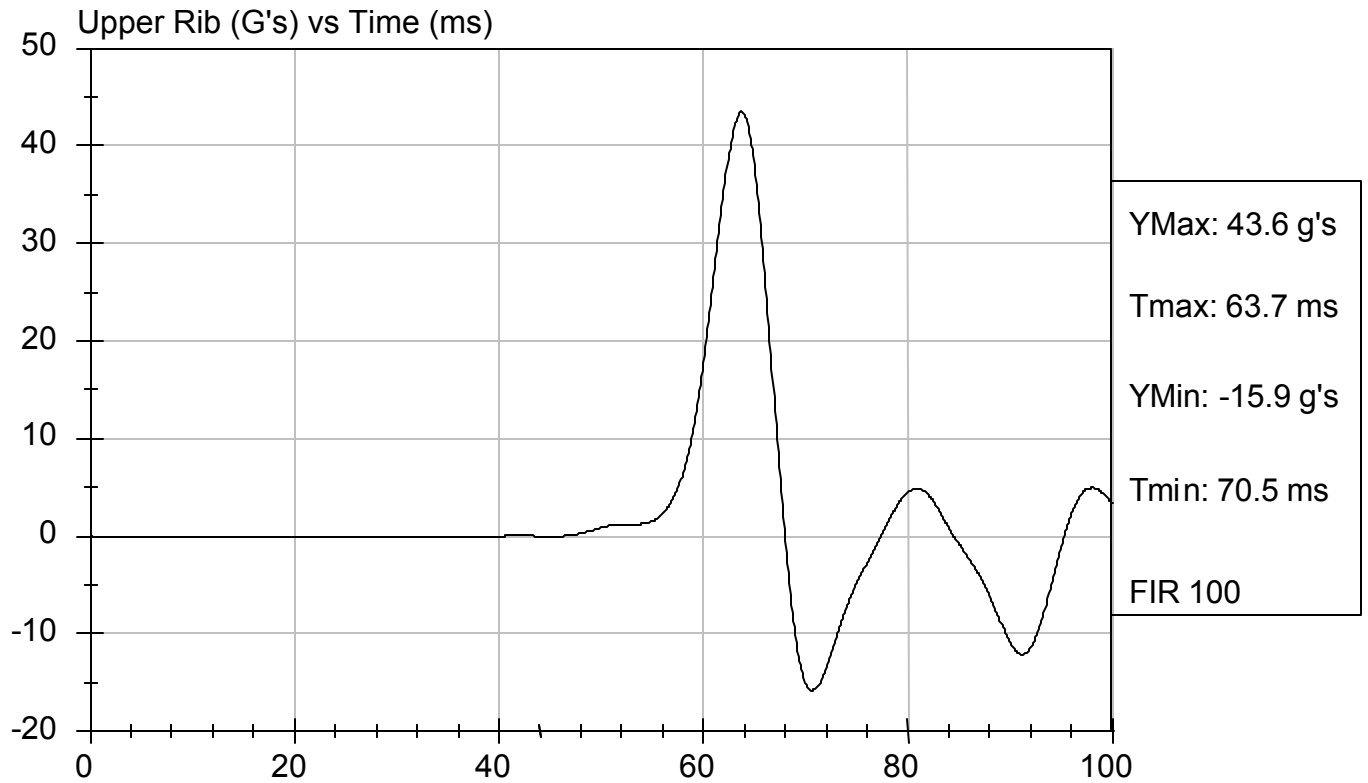
David Winkelbauer
Approved By

4/2/09
Test Date



Test Desc: Thorax Impact
Component ID: D09722

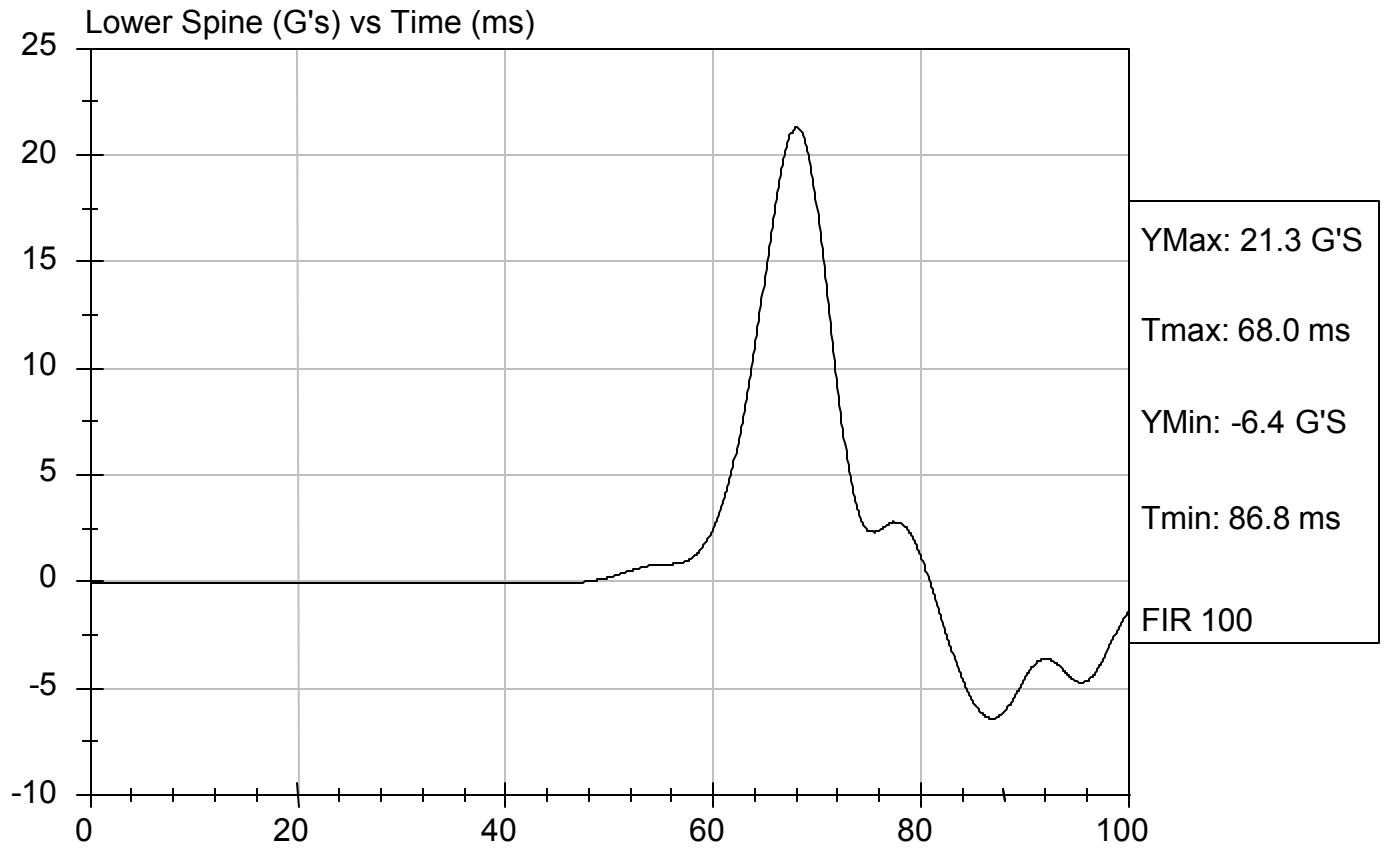
Test Date: 4/2/09
Speed: 14.1 ft/s, 4.30 m/s





Test Desc: Thorax Impact
Component ID: D09722

Test Date: 4/2/09
Speed: 14.1 ft/s, 4.30 m/s



SID Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

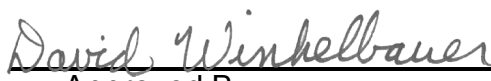
ATD Serial No: 037

Test I.D: D09723

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	22.4	Pass
Laboratory Relative Humidity	%	10 to 70	27	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Pelvis Acceleration	G's	40 - 60	44	Pass
			Overall Test Results	Pass


Laboratory Technician

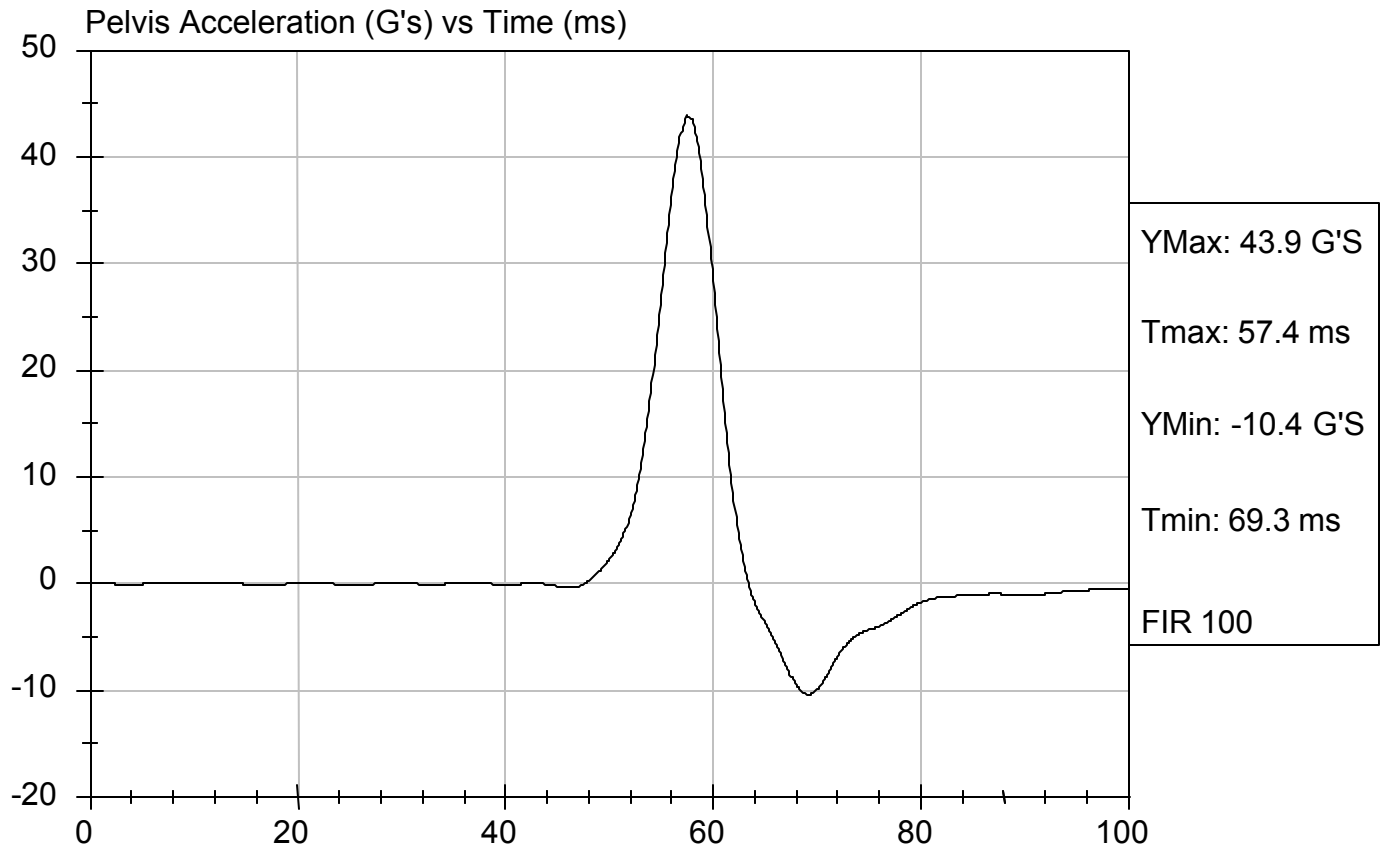
4/2/09
Test Date


Approved By



Test Desc: Pelvis Impact
Component ID: D09723

Test Date: 4/2/09
Speed: 14.1 ft/s, 4.30 m/s



SID Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 037

Test I.D: D09724

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	22.5	Pass
Laboratory Relative Humidity	%	10 to 70	27	Pass
Force At 12.7 mm	N	104 -162	114	Pass
Force At 19 mm	N	163 - 222	183	Pass
Force At 25.4 mm	N	222 - 280	262	Pass
Force At 33 mm	N	325 - 391	379	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

4/2/09
Test Date

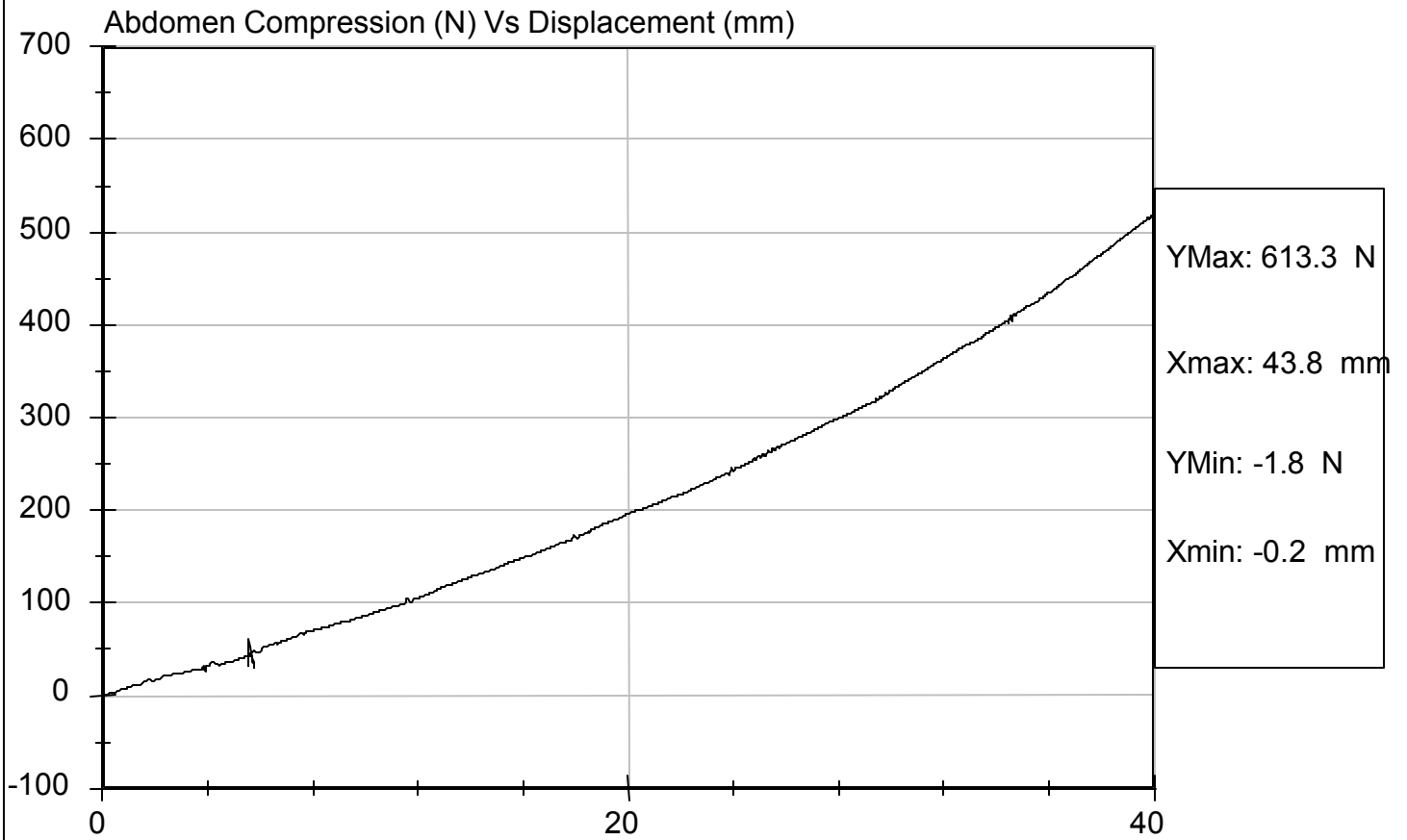
David Winkelbauer
Approved By



Test Description: Abdomen Compression Test Date: 4/2/09

Component: D09724

Speed: 0 ft/s, 0 m/s



SID Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 037

Test I.D: D09725

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	22.4	Pass
Laboratory Relative Humidity	%	10 to 70	27	Pass
Force At 0 deg	N	0 - 26.7	0	Pass
Force At 20 deg	N	97.9 - 151.2	119.1	Pass
Force At 30 deg	N	151.2 - 204.6	154.6	Pass
Force At 40 deg	N	204.6 - 258.0	206.1	Pass
Return Angle	Deg	12 Maximum	4	Pass
			Overall Test Results	Pass

Jessica Hall
Laboratory Technician

4/2/09
Test Date

David Winkelbauer
Approved By

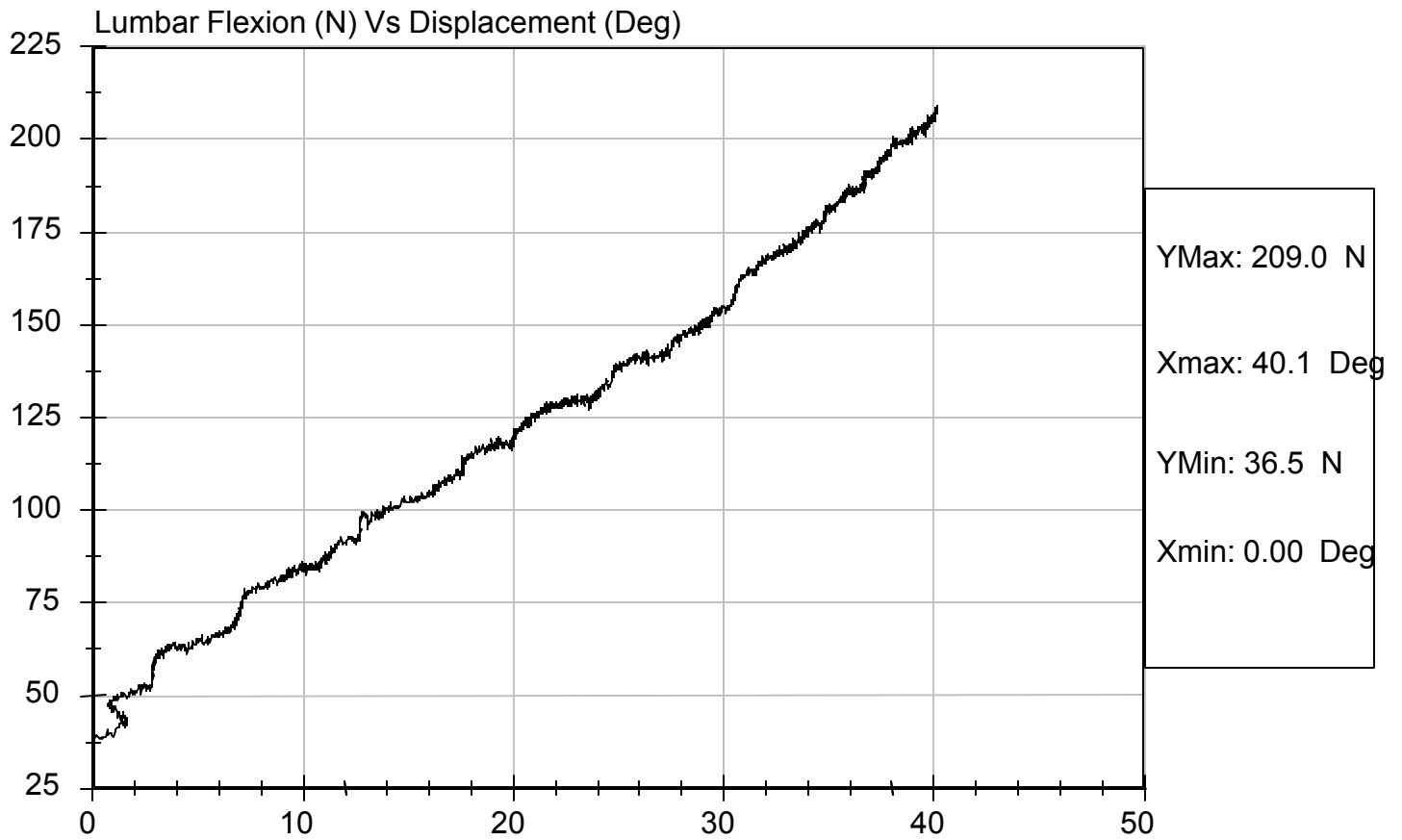


Test Description: Lumbar Flexion

Test Date: 4/2/09

Component: D09725

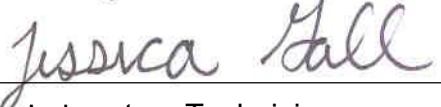
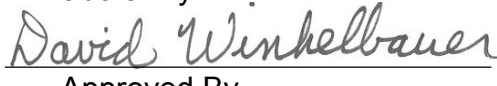
Speed: 0 ft/s, 0 m/s



SID Calibration Data Sheet
Side Impact Dummy
Inspection Checklist

ATD Serial No: 037

Test Part	Items Checked	Result
Skin	Visual inspection	Pass
Head	Visual, ballast, accelerometer mount	Pass
Neck	Visual	Pass
Spine Box	Visual, ballast, accelerometer mount	Pass
Rib Cage	Visual, measure	Pass
Sternum	Visual	Pass
Lumbar Spine	Visual	Pass
Abdomen	Visual	Pass
Pelvis	Visual, palpate, accelerometer mount	Pass
Upper Legs	Visual	Pass
Knees	Visual	Pass
Lower Legs	Visual, range of motion	Pass
Ankles	Visual, range of motion	Pass
Feet	Visual, range of motion	Pass
Joints	1 to 2 g range	Pass
Other		Pass


Laboratory Technician

Approved By

04/2/2009

Test Date

CERTIFICATION DATA

Dummy Serial Number: 036

Calibration Test Results Summary

Dummy Serial Number: 036

Pre-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID Calibration Data Sheet
Side Impact Dummy
External Measurements

ATD Serial No: 036

Test I.D: D0955

Tested Parameter	Units	Specification	Result	Pass/Fail
SH - Seated Height	mm	889 - 909	893	Pass
RH - Rib Height	mm	501 - 521	517	Pass
HP - Hip Pivot Height	mm	99 ref.	99	Pass
RD - Rib from Back Line	mm	229 - 241	238	Pass
KV - Knee Pivot to Back Line	mm	511 - 526	524	Pass
SW - Knee Pivot to Floor	mm	490 - 505	493	Pass
HW - Hip Width	mm	356 - 391	373	Pass
Overall Test Results				Pass


 Laboratory Technician

3/18/2009
 Test Date


 Approved By

SID Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 036

Test I.D: D09632

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Probe Velocity	m/s	4.22 - 4.31	4.30	Pass
Upper Rib	G's	37 - 46	40	Pass
Lower Rib	G's	37 - 46	39	Pass
Lower Spine	G's	15 - 22	19	Pass
			Overall Test Results	Pass

Jessica Hall
Laboratory Technician

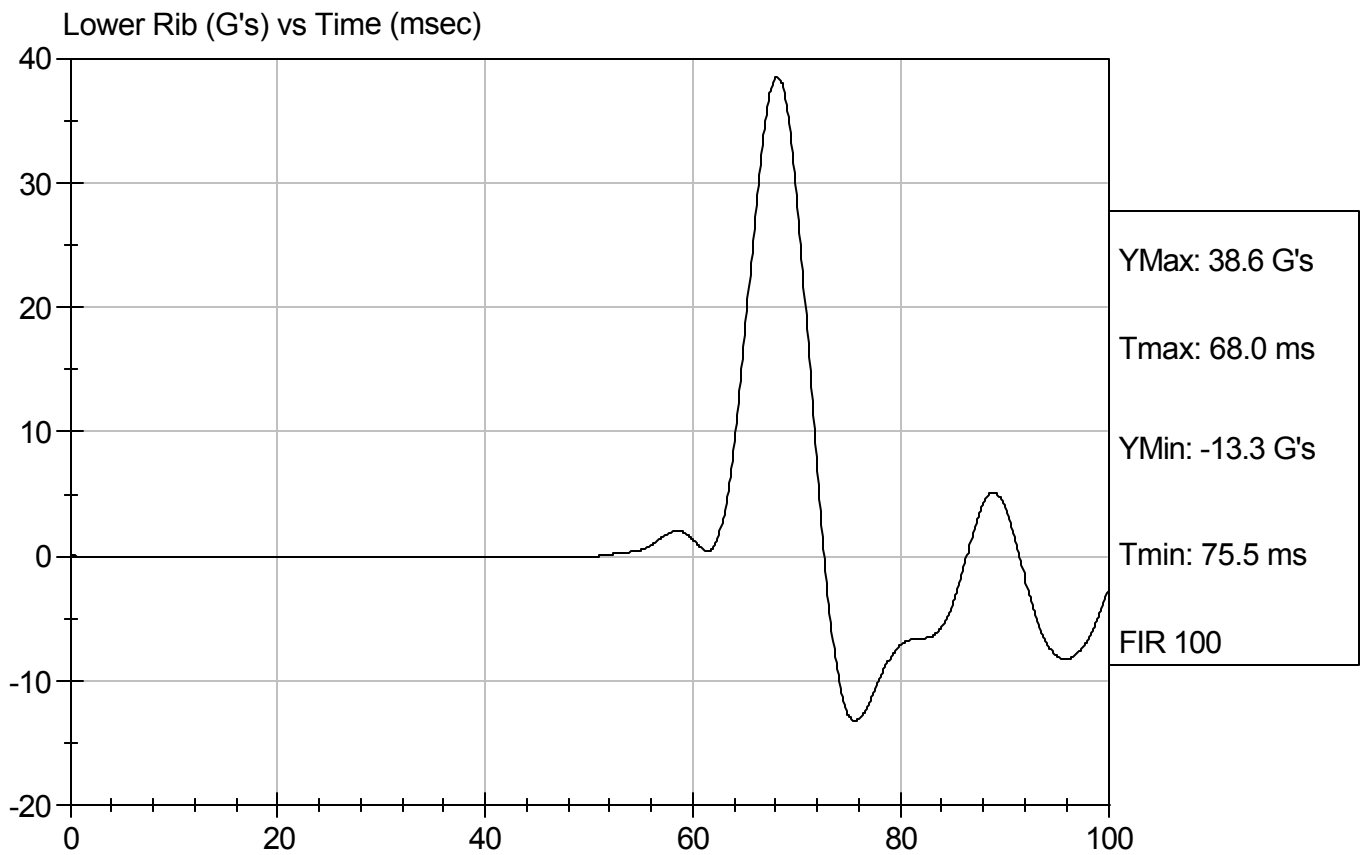
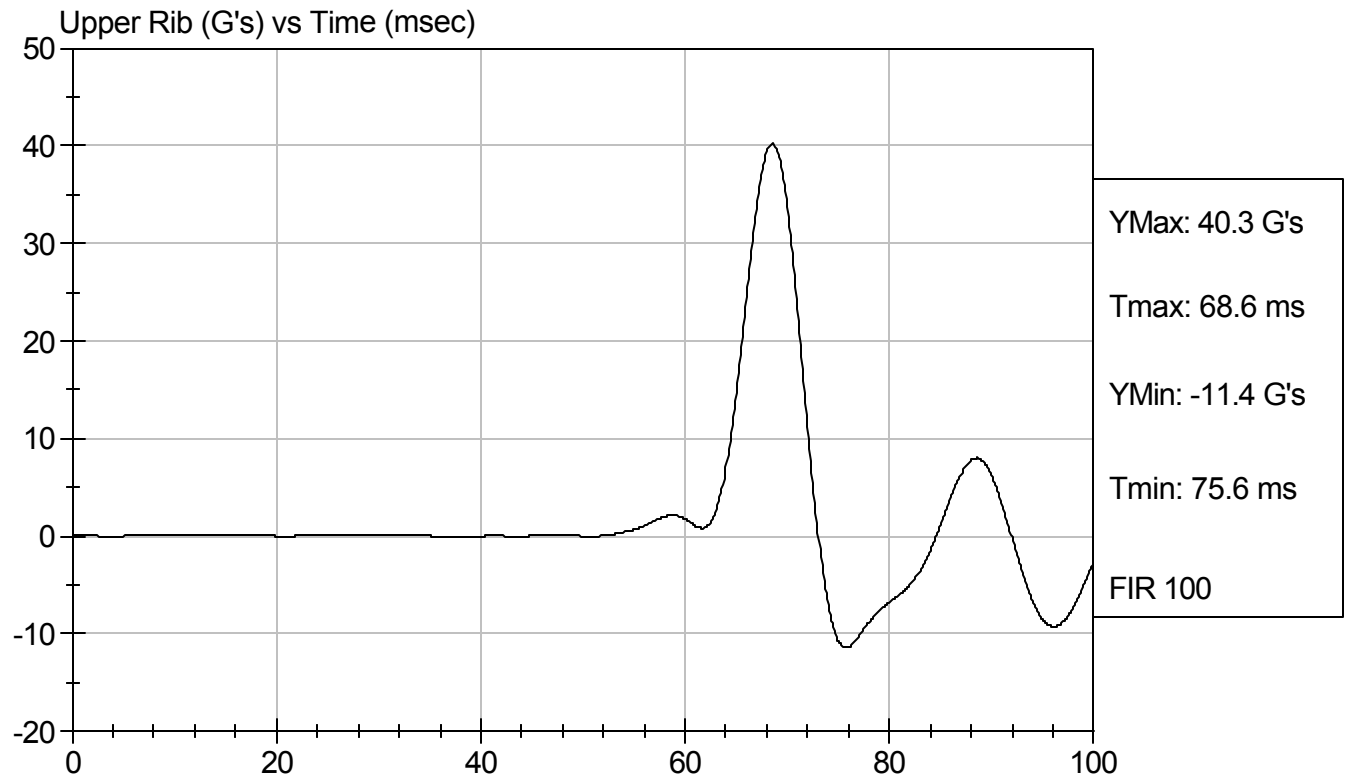
3/24/09
Test Date

David Winkelbauer
Approved By



Test Desc: Thorax Impact
Component ID: D09632

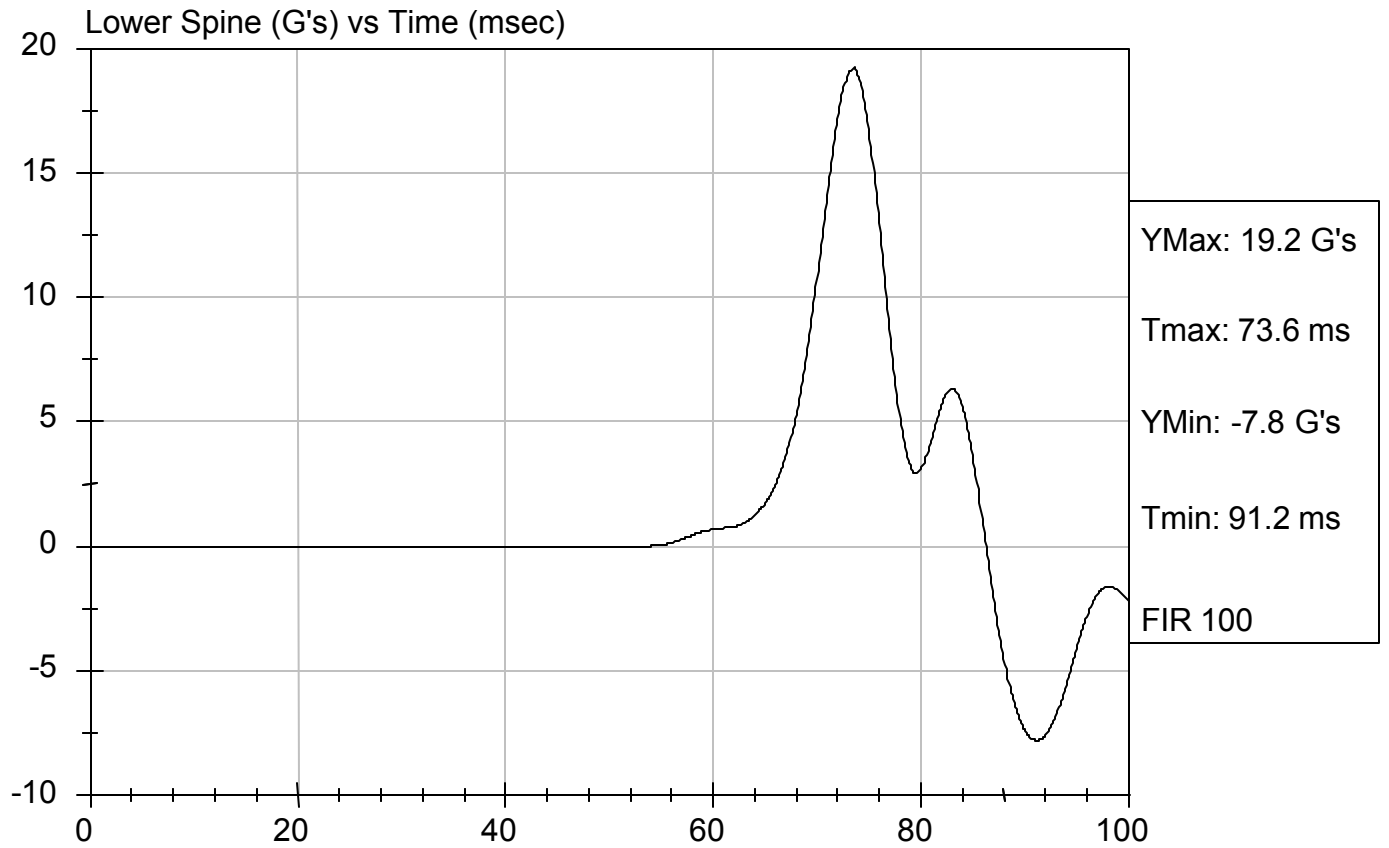
Test Date: 3/24/09
Speed: 14.12 ft/sec, 4.30 m/sec





Test Desc: Thorax Impact
Component ID: D09632

Test Date: 3/24/09
Speed: 14.12 ft/sec, 4.30 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

ATD Serial No: 036

Test I.D: D09633

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	38	Pass
Probe Velocity	m/s	4.27 - 4.33	4.27	Pass
Pelvis Acceleration	G's	40 - 60	41	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

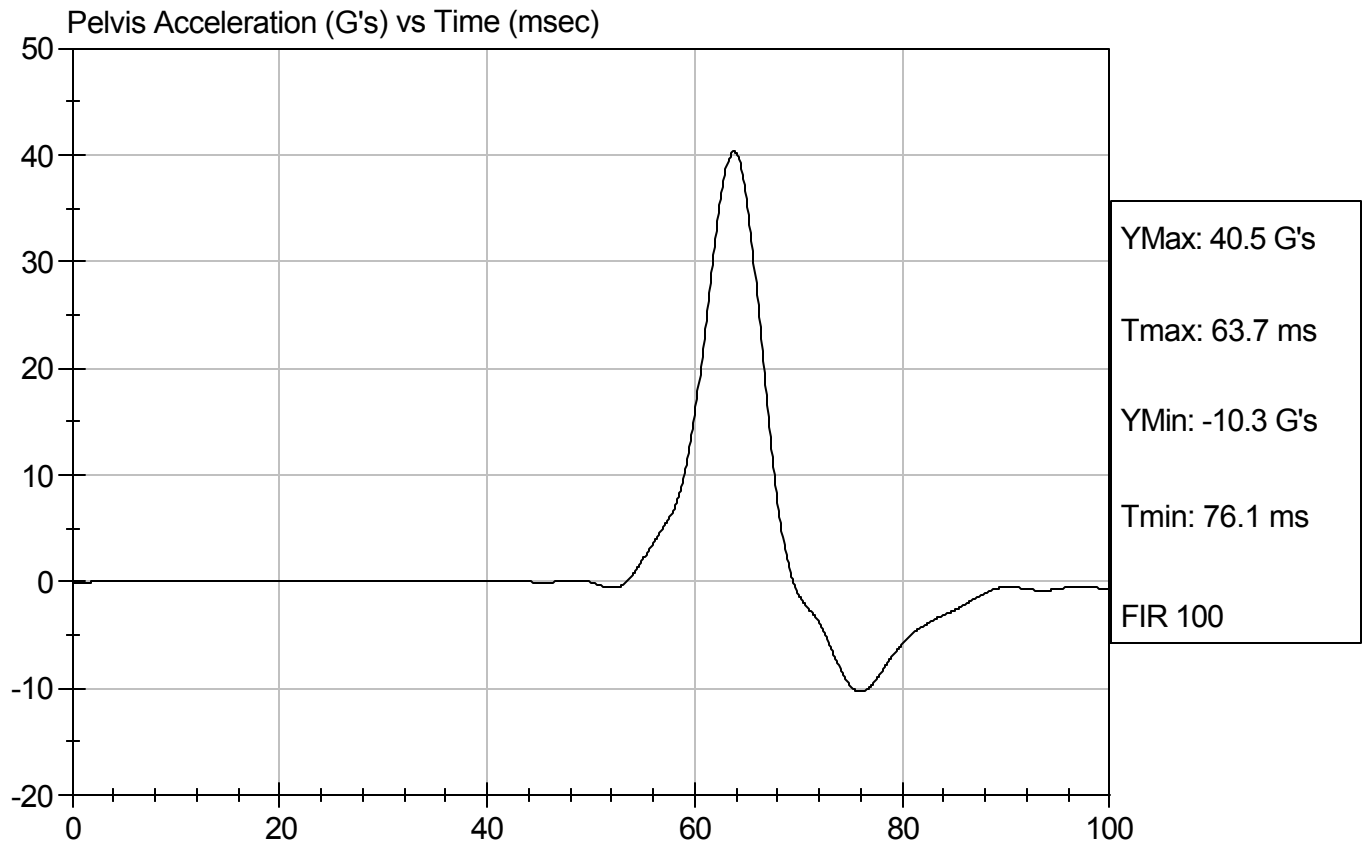
3/24/09
Test Date

David Winkelbauer
Approved By



Test Desc: Pelvis Impact
Component ID: D09633

Test Date: 3/24/09
Speed: 14.02 ft/sec, 4.27 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 036

Test I.D: D09634

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	32	Pass
Force At 12.7 mm	N	104 -162	151	Pass
Force At 19 mm	N	163 - 222	207	Pass
Force At 25.4 mm	N	222 - 280	277	Pass
Force At 33 mm	N	325 - 391	375	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

3/24/09
Test Date

David Winkelbauer
Approved By

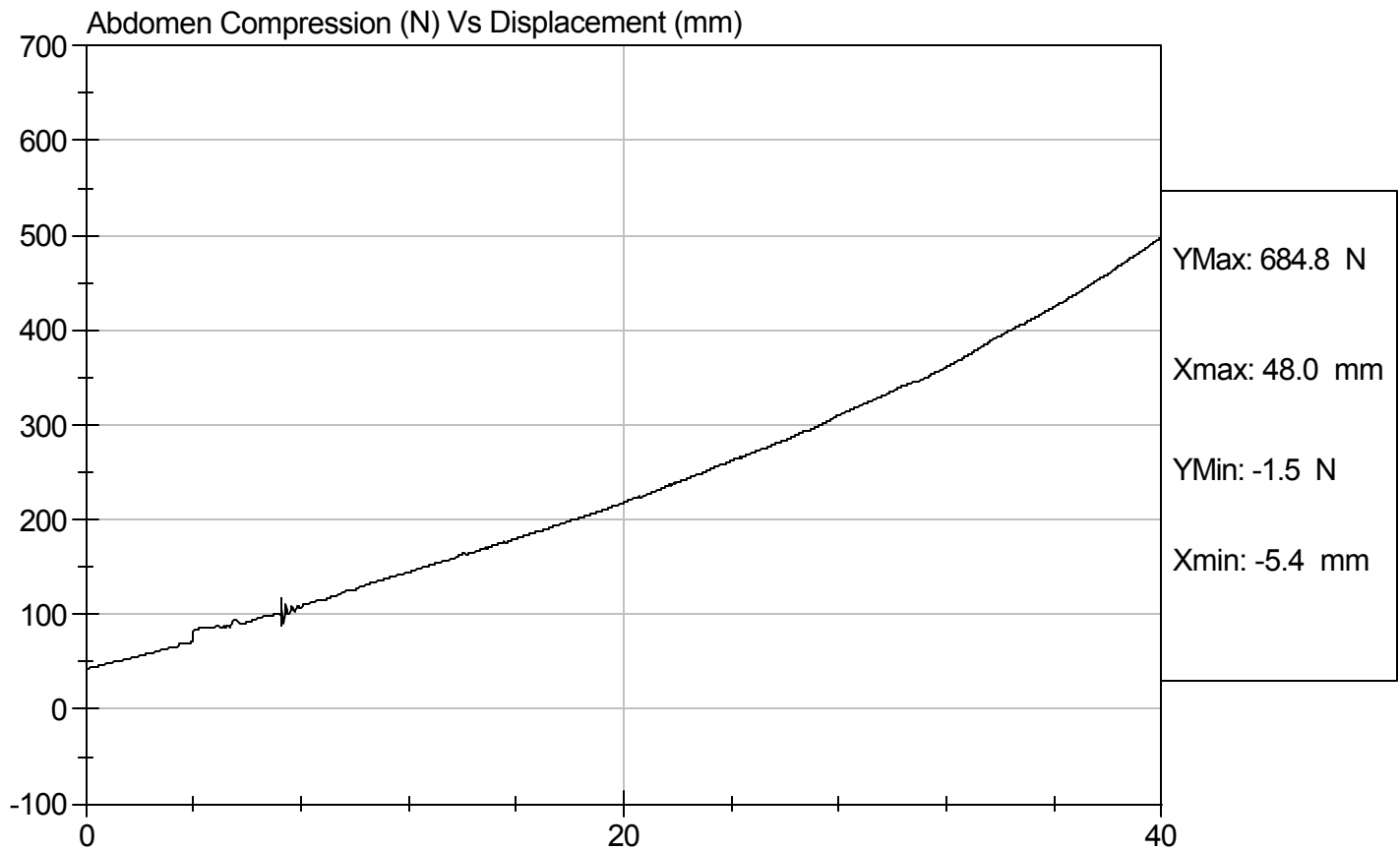


Test Description: Abdomen Compression

Test Date: 3/24/09

Component: D09634

Speed: 0 ft/sec, 0 m/sec

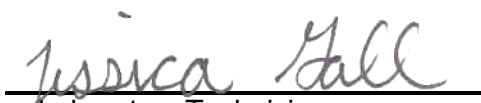



SID Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 036

Test I.D: D09635

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	38	Pass
Force At 0 deg	N	0 - 26.7	0	Pass
Force At 20 deg	N	97.9 - 151.2	119.4	Pass
Force At 30 deg	N	151.2 - 204.6	166.7	Pass
Force At 40 deg	N	204.6 - 258.0	221.7	Pass
Return Angle	Deg	12 Maximum	6	Pass
			Overall Test Results	Pass


 Laboratory Technician


 Approved By

3/24/09
 Test Date

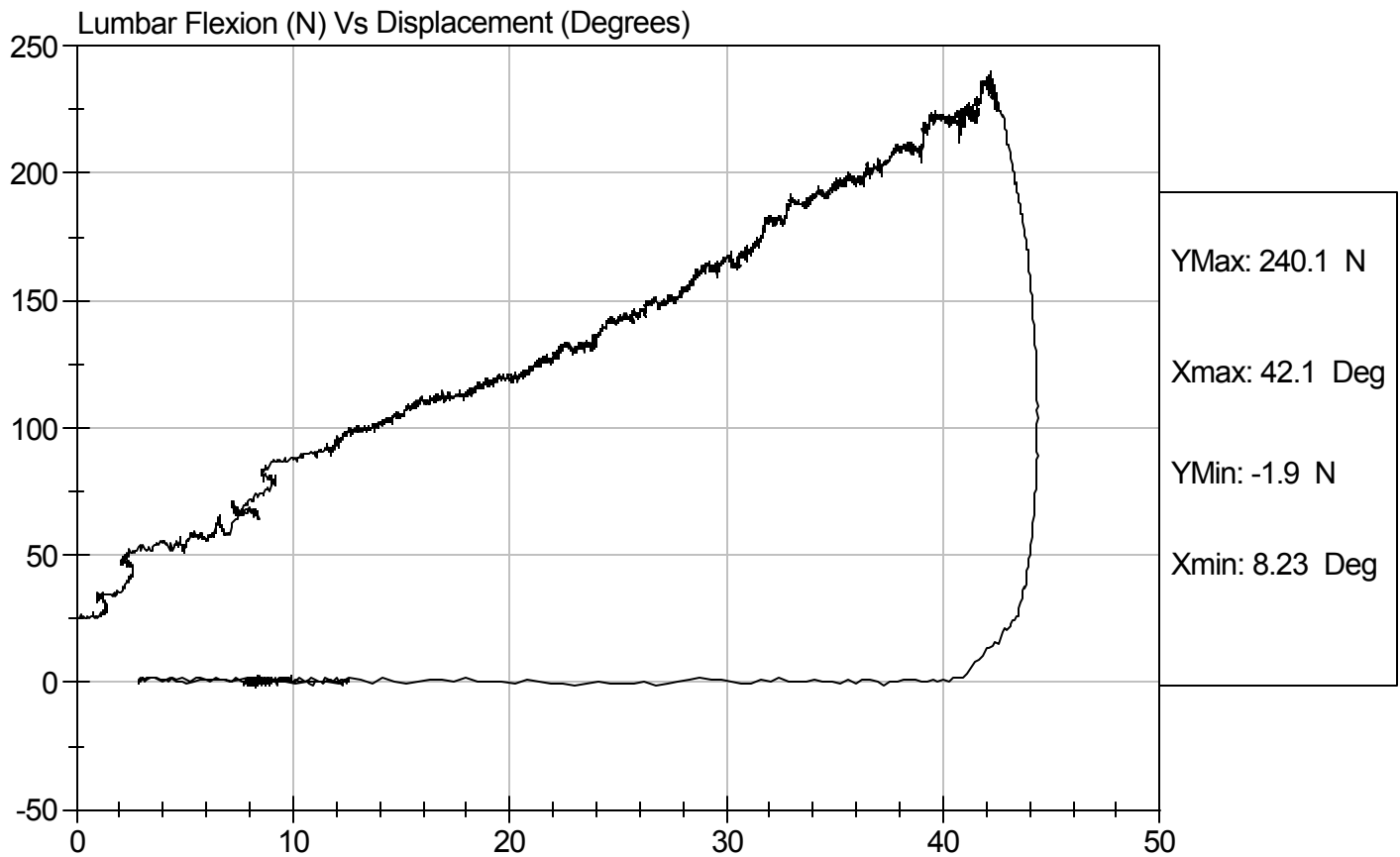


Test Description: Lumbar Flexion

Test Date: 3/24/09

Component: D09635

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Thoracic Shock Absorber Calibration

ATD Serial No: 036


Test I.D: D09558

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	18.9 to 25.5	21.3	Pass
Laboratory Relative Humidity		%	10 to 70	33	Pass
Velocity 3.05 m/s	Force	N	836 - 1125	939	Pass
	Displacement	mm	30 - 35	30.3	Pass
Velocity 4.27 m/s	Force	N	1730 - 2099	1,736	Pass
	Displacement	mm	32 - 37	34.2	Pass
Velocity 6.1 m/s	Force	N	3741 - 4448	3,772	Pass
	Displacement	mm	33 - 40	36.9	Pass
Overall Test Results					Pass


 Laboratory Technician

3/18/09

Test Date

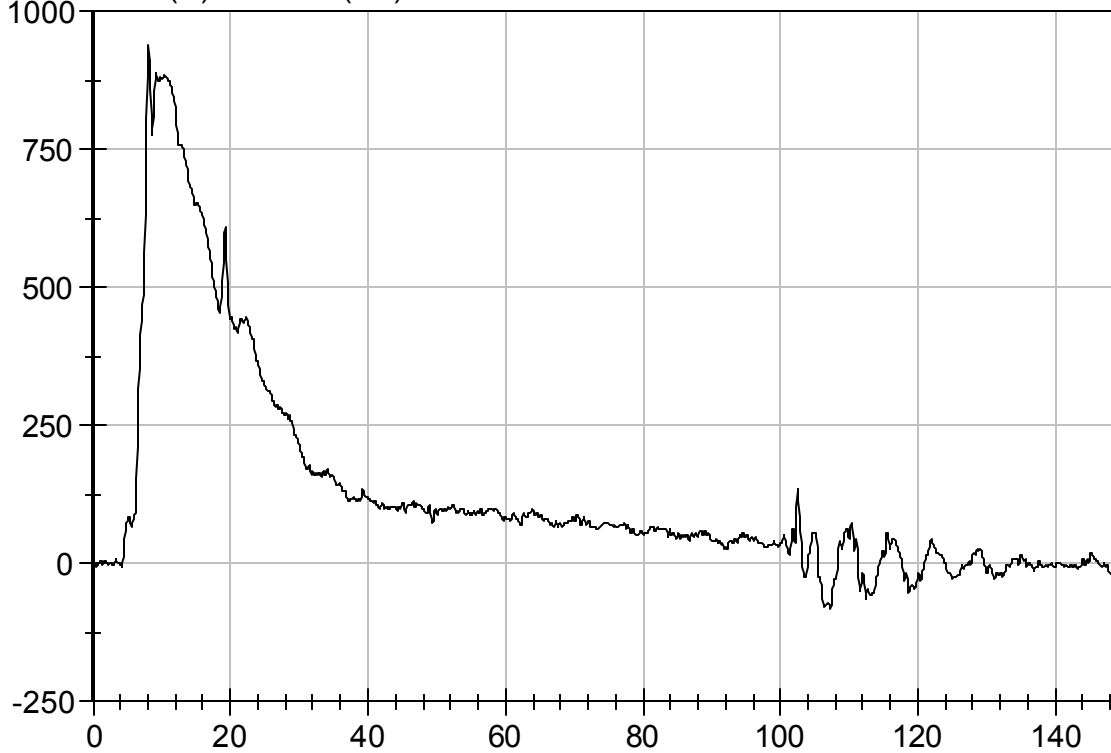

 Approved By



Test Desc: Dampener Impact
Component ID: D09556

Test Date: 3/18/09
Speed: 10 ft/sec, 3.05 m/sec

Force (N) vs TIME (ms)



YMax: 939.0 N

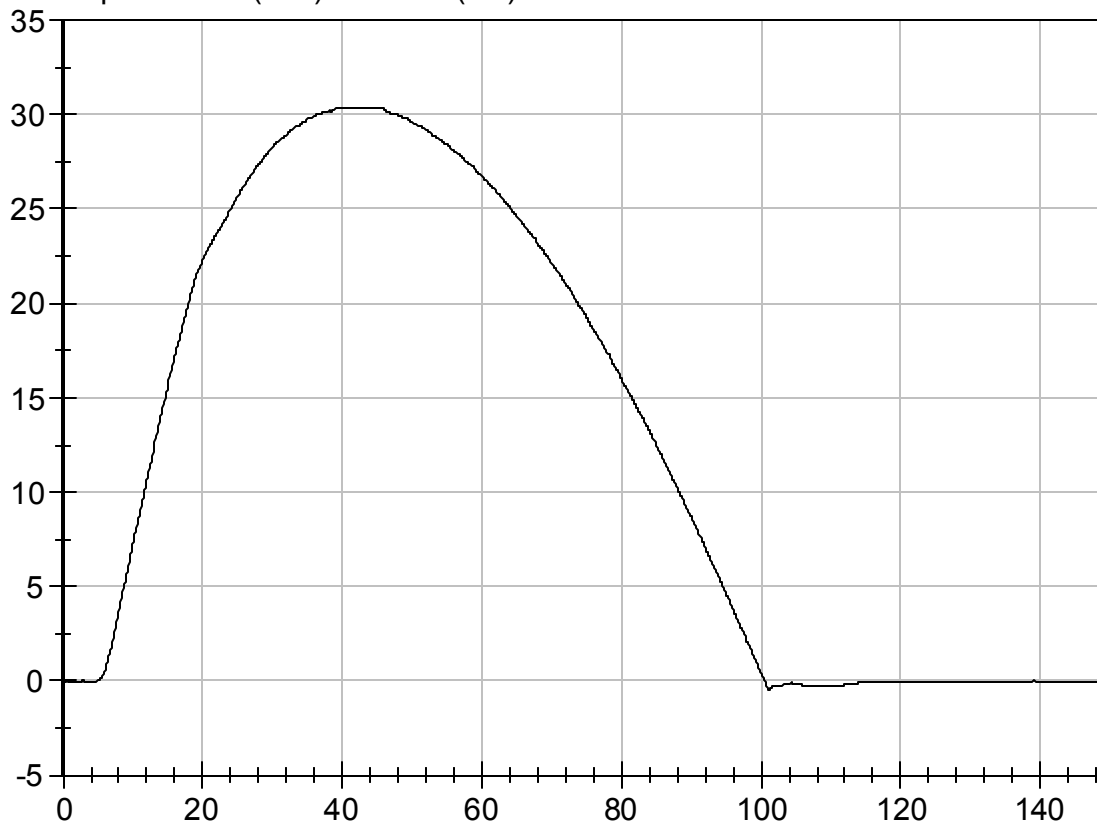
Tmax: 8.1 ms

YMin: -82.2 N

Tmin: 107.3 ms

CFC 1000

Displacement (mm) vs TIME (ms)



YMax: 30.3 mm

Tmax: 39.2 ms

YMin: -0.4 mm

Tmin: 101.2 ms

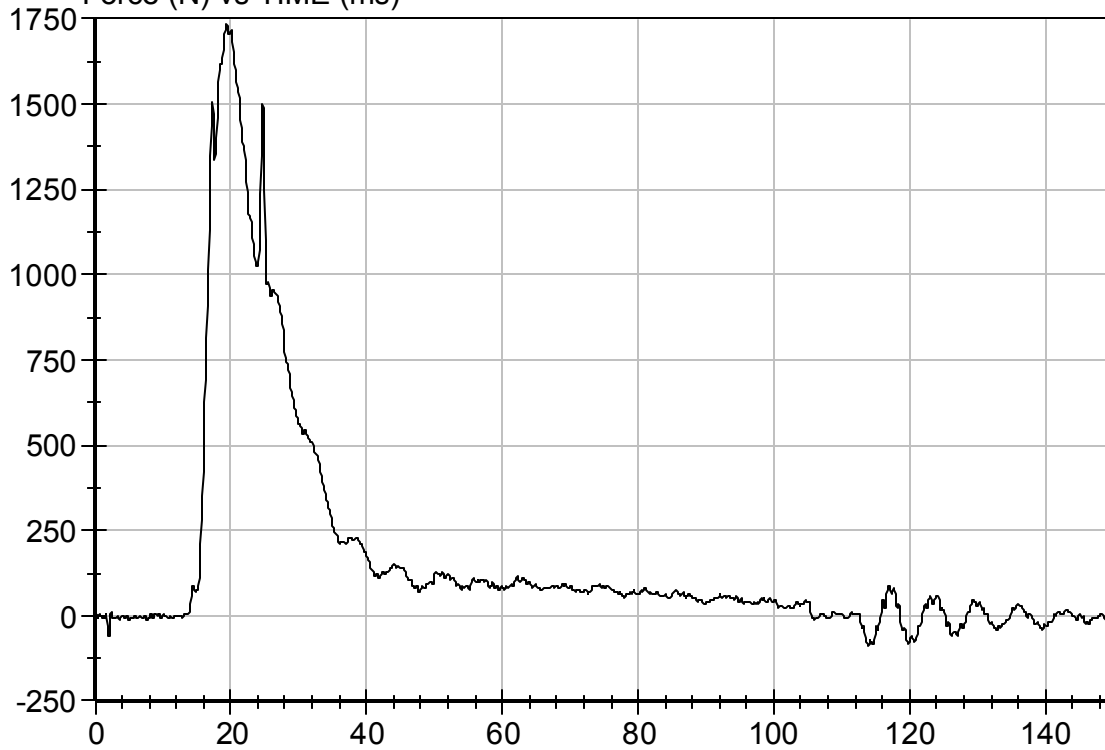
CFC 1000



Test Desc: Dampener Impact
Component ID: D09557

Test Date: 3/18/09
Speed: 14 ft/sec, 4.27 m/sec

Force (N) vs TIME (ms)



YMax: 1735.8 N

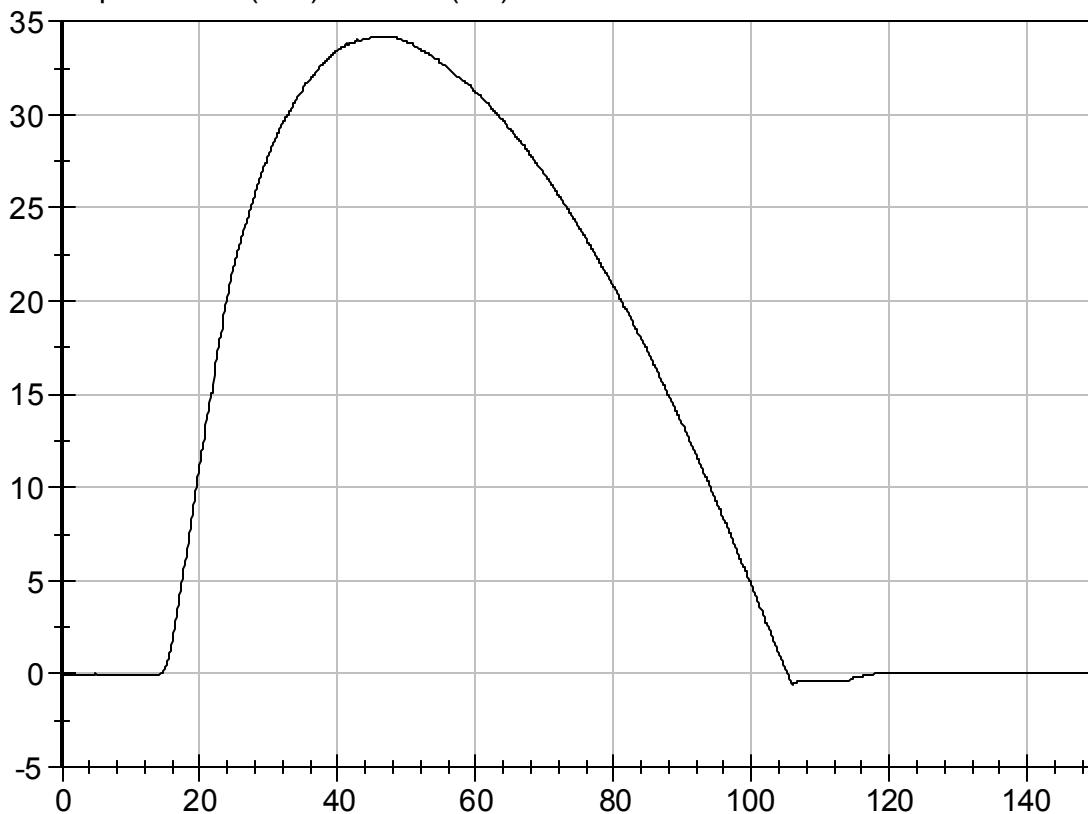
Tmax: 19.4 ms

YMin: -88.2 N

Tmin: 113.9 ms

CFC 1000

Displacement (mm) vs TIME (ms)



YMax: 34.2 mm

Tmax: 45.4 ms

YMin: -0.5 mm

Tmin: 105.9 ms

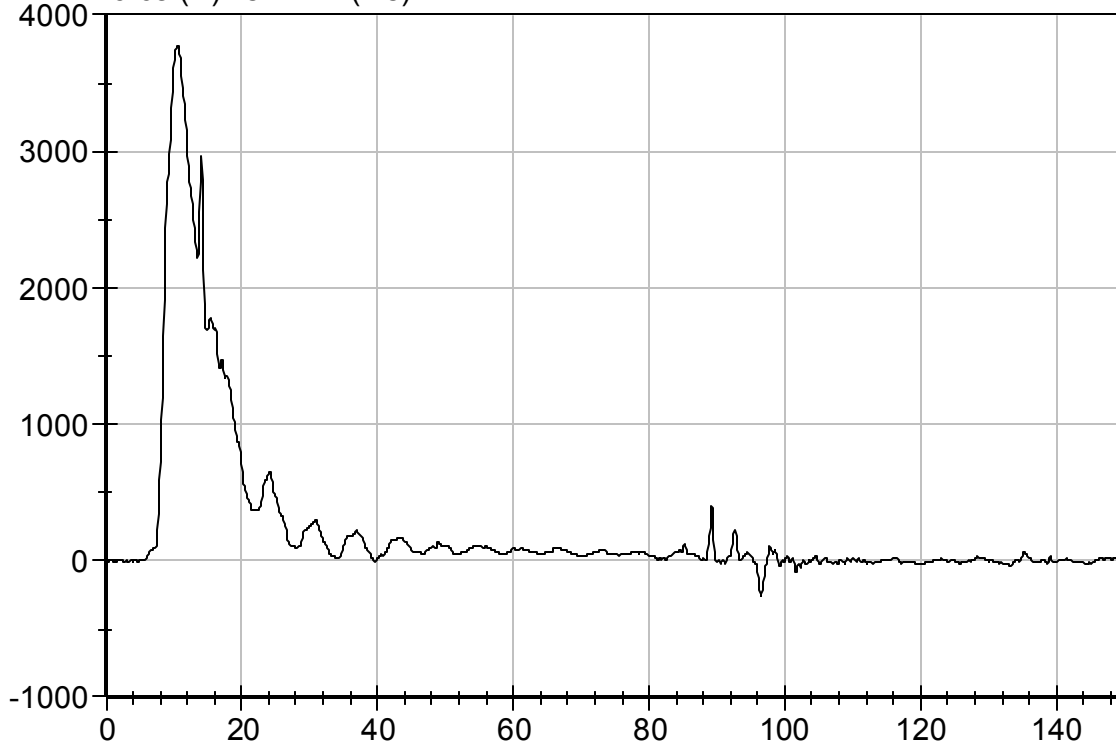
CFC 1000



Test Desc: Dampener Impact
Component ID: D09558

Test Date: 3/18/09
Speed: 20 ft/sec, 6.10 m/sec

Force (N) vs TIME (ms)



YMax: 3772.2 N

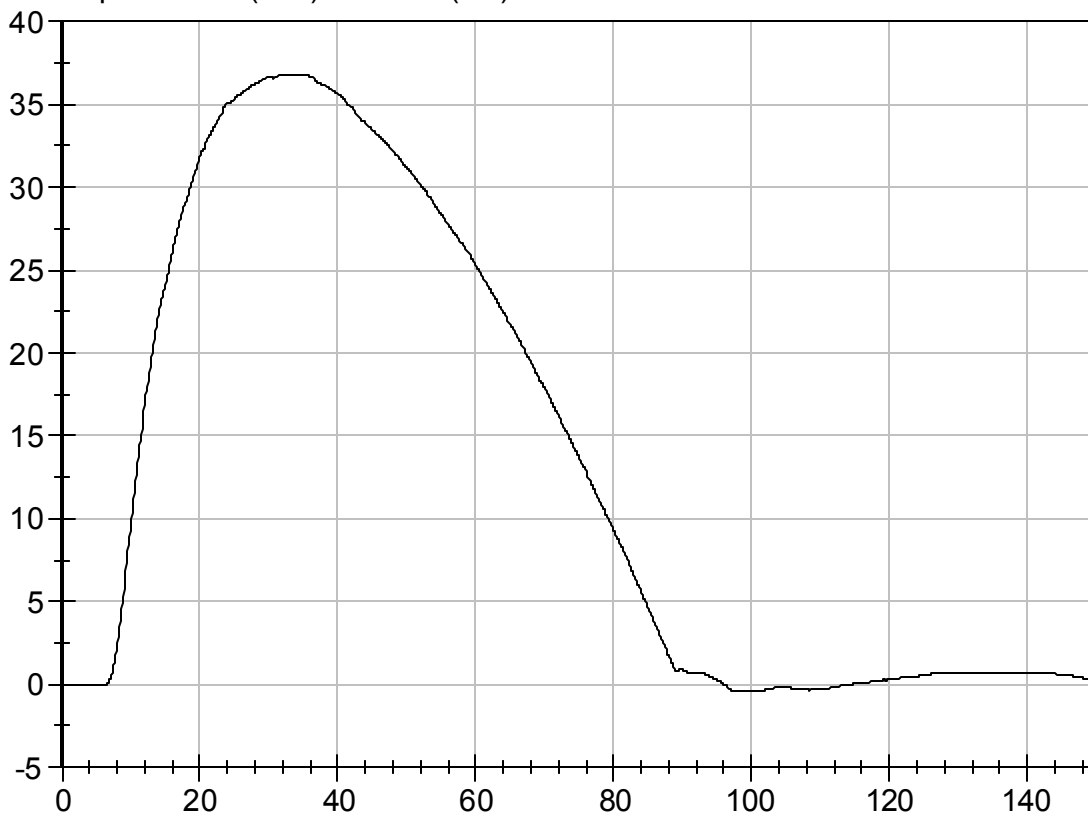
Tmax: 10.5 ms

YMin: -253.2 N

Tmin: 96.5 ms

CFC 1000

Displacement (mm) vs TIME (ms)



YMax: 36.9 mm

Tmax: 34.0 ms

YMin: -0.4 mm

Tmin: 100.8 ms

CFC 1000

Calibration Test Results Summary

Dummy Serial Number: 036

Post-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 036

Test I.D: D09712

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	22.4	Pass
Laboratory Relative Humidity	%	10 to 70	27	Pass
Probe Velocity	m/s	4.22 - 4.31	4.30	Pass
Upper Rib	G's	37 - 46	39	Pass
Lower Rib	G's	37 - 46	37	Pass
Lower Spine	G's	15 - 22	18	Pass
Overall Test Results				Pass


Laboratory Technician


Approved By

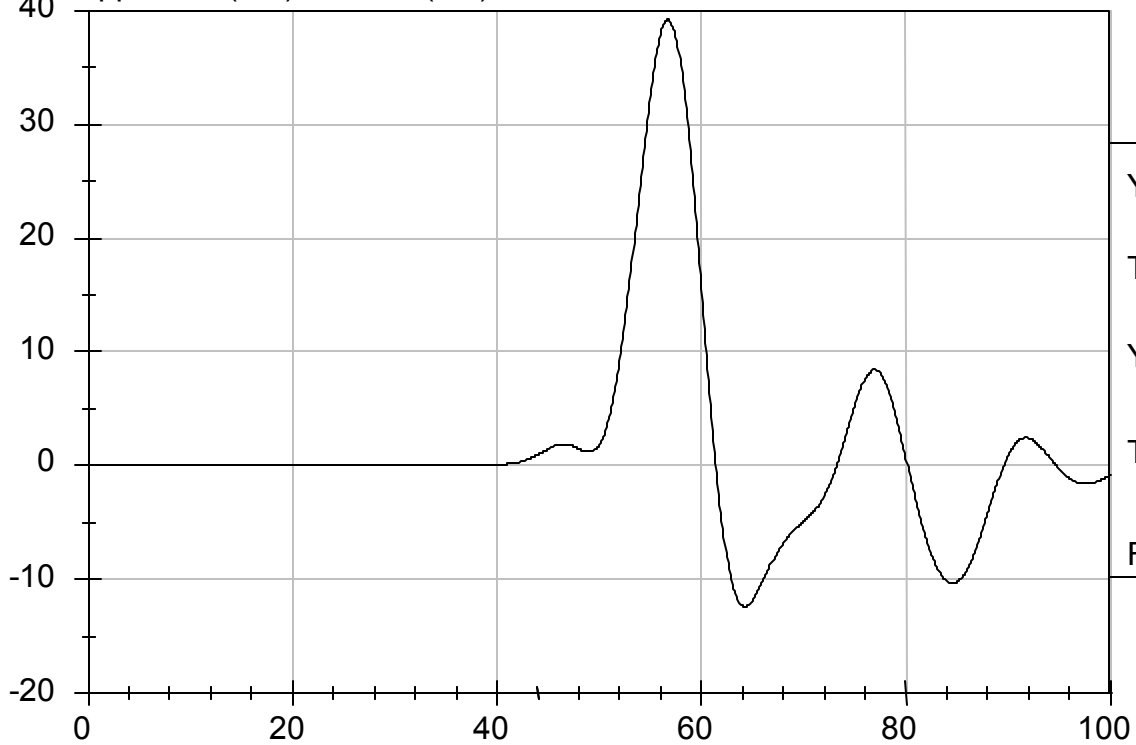
4/2/09
Test Date



Test Desc: Thorax Impact
Component ID: D09712

Test Date: 4/2/09
Speed: 14.1 ft/s, 4.30 m/s

Upper Rib (G's) vs Time (ms)



YMax: 39.3 G's

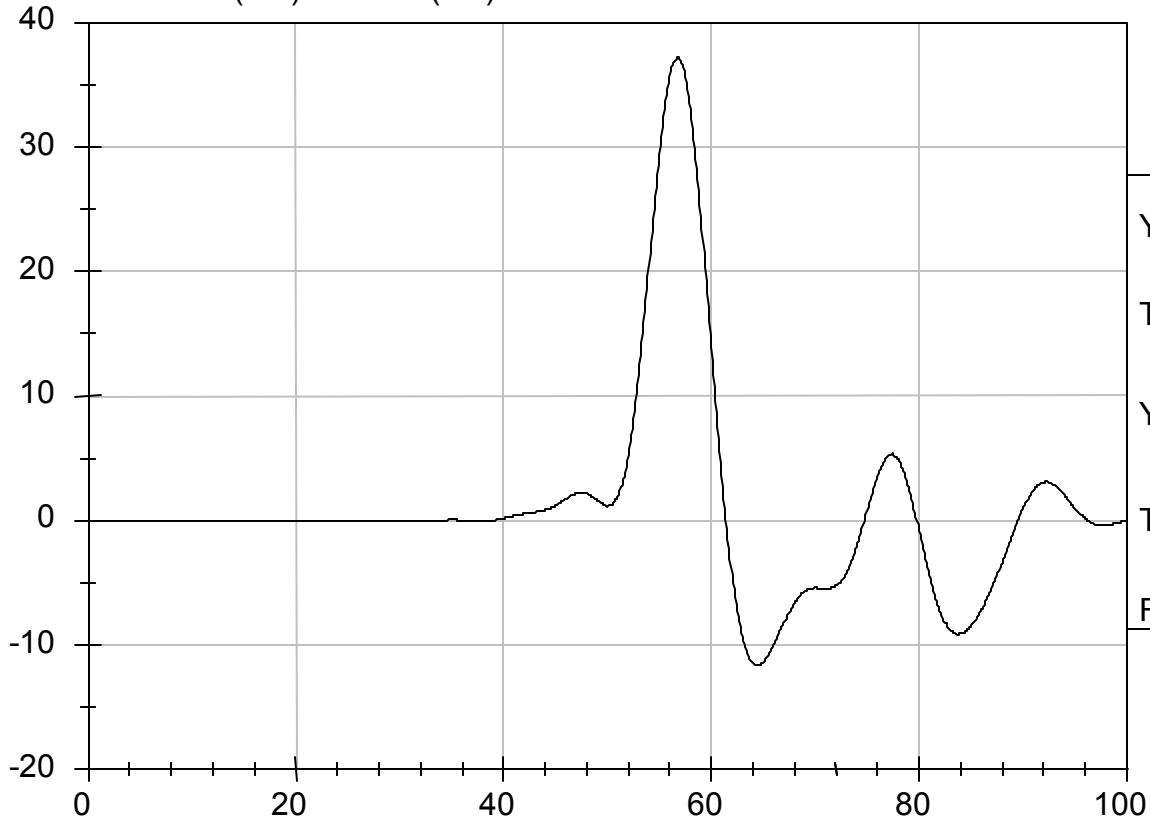
Tmax: 56.8 ms

YMin: -12.5 G's

Tmin: 64.3 ms

FIR 100

Lower Rib (G's) vs Time (ms)



YMax: 37.3 G's

Tmax: 56.8 ms

YMin: -11.7 G's

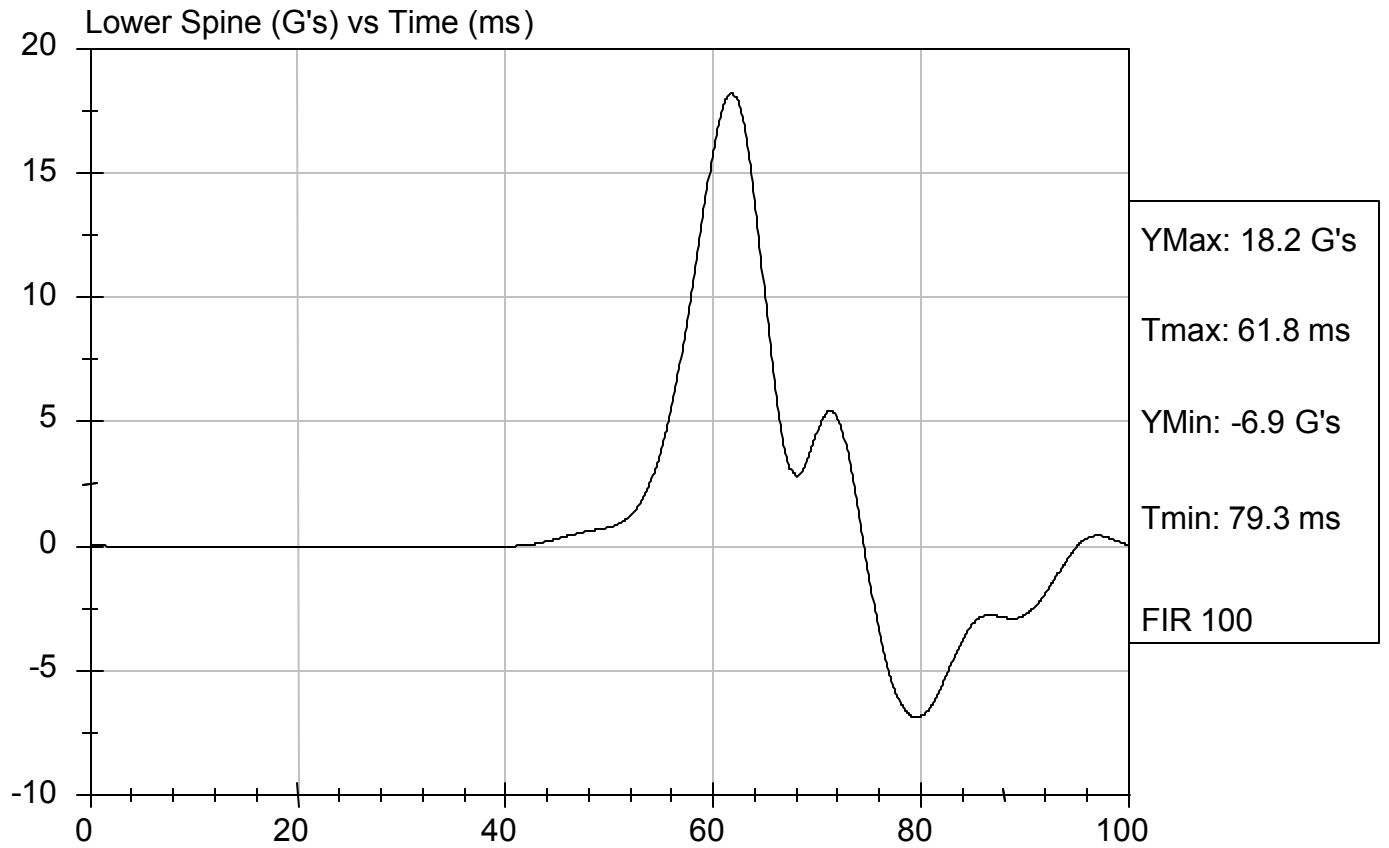
Tmin: 64.3 ms

FIR 100



Test Desc: Thorax Impact
Component ID: D09712

Test Date: 4/2/09
Speed: 14.1 ft/s, 4.30 m/s



SID Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

ATD Serial No: 036

Test I.D: D09713

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	25	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Pelvis Acceleration	G's	40 - 60	46	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

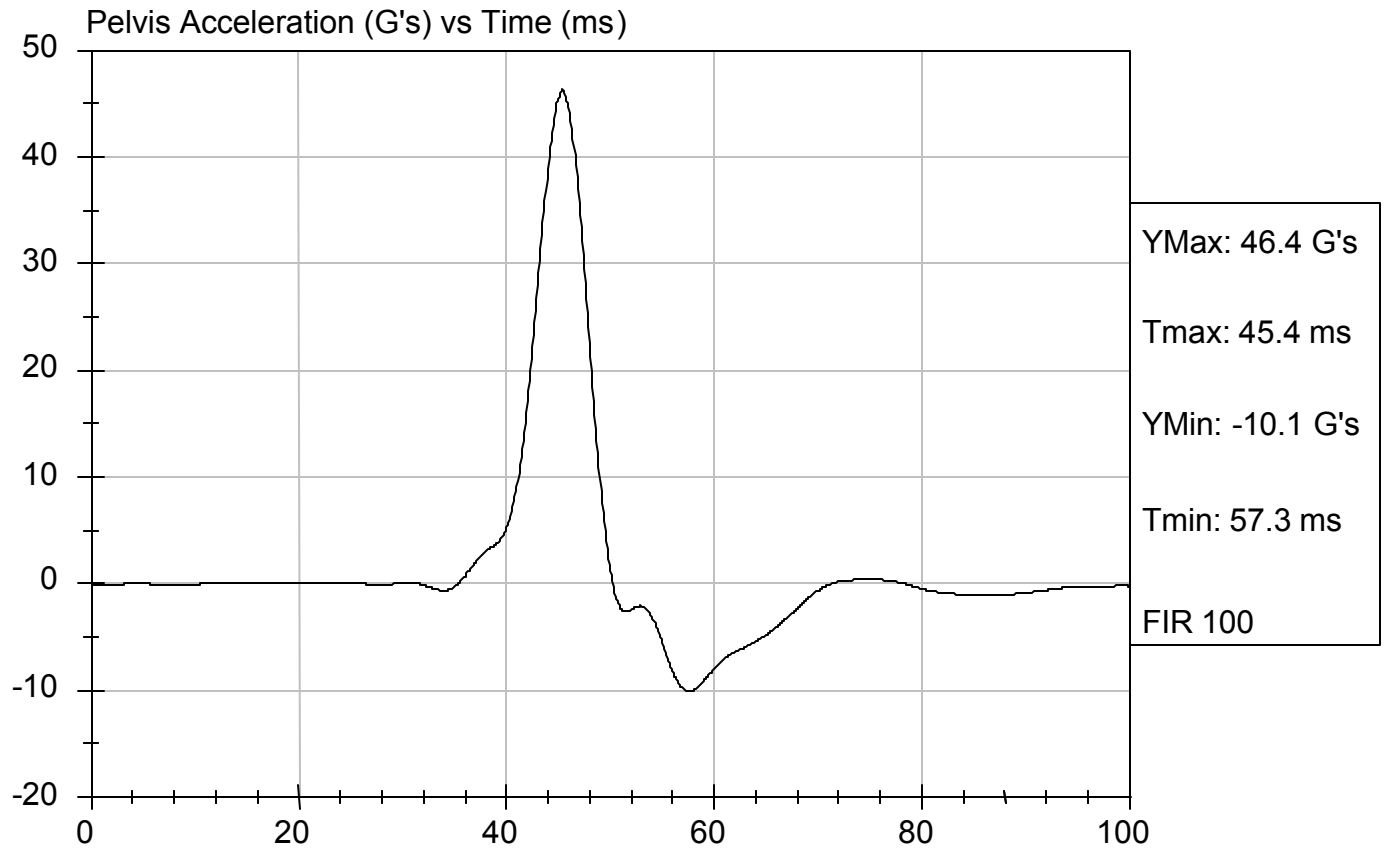
4/2/09
Test Date

David Winkelbauer
Approved By



Test Desc: Pelvis Impact
Component ID: D09713

Test Date: 4/2/09
Speed: 14.1 ft/s, 4.30 m/s



SID Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 036

Test I.D: D09714

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	22.4	Pass
Laboratory Relative Humidity	%	10 to 70	27	Pass
Force At 12.7 mm	N	104 -162	109	Pass
Force At 19 mm	N	163 - 222	167	Pass
Force At 25.4 mm	N	222 - 280	250	Pass
Force At 33 mm	N	325 - 391	353	Pass
Overall Test Results				Pass

Jessica Gall
Laboratory Technician

4/2/09
Test Date

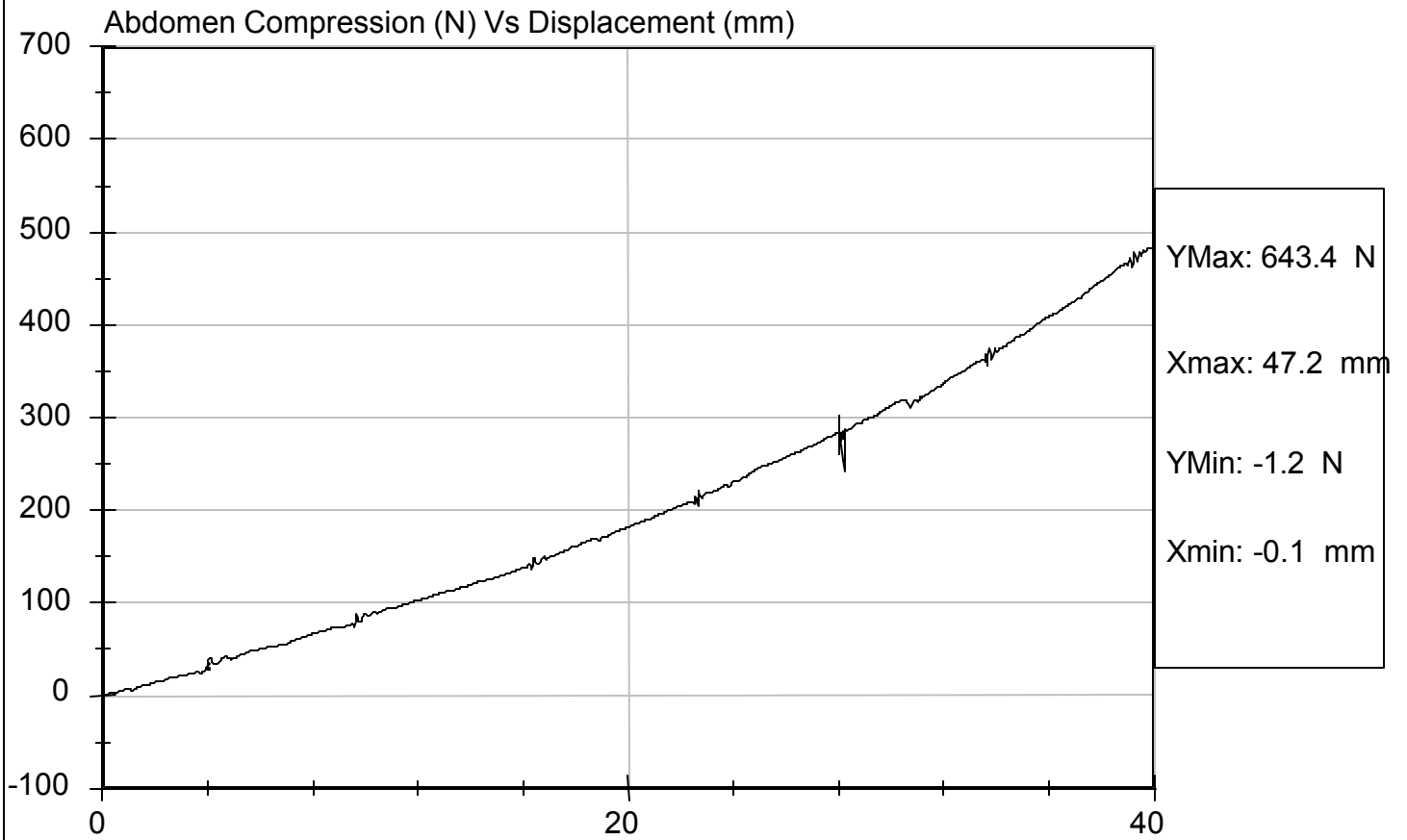
David Winkelbauer
Approved By



Test Description: Abdomen Compression Test Date: 4/2/09

Component: D09714

Speed: 0 ft/s, 0 m/s



SID Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 036

Test I.D: D09715

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	22.4	Pass
Laboratory Relative Humidity	%	10 to 70	27	Pass
Force At 0 deg	N	0 - 26.7	0	Pass
Force At 20 deg	N	97.9 - 151.2	141.0	Pass
Force At 30 deg	N	151.2 - 204.6	187.7	Pass
Force At 40 deg	N	204.6 - 258.0	241.4	Pass
Return Angle	Deg	12 Maximum	3	Pass
Overall Test Results			Pass	


Laboratory Technician


Approved By

4/2/09
Test Date

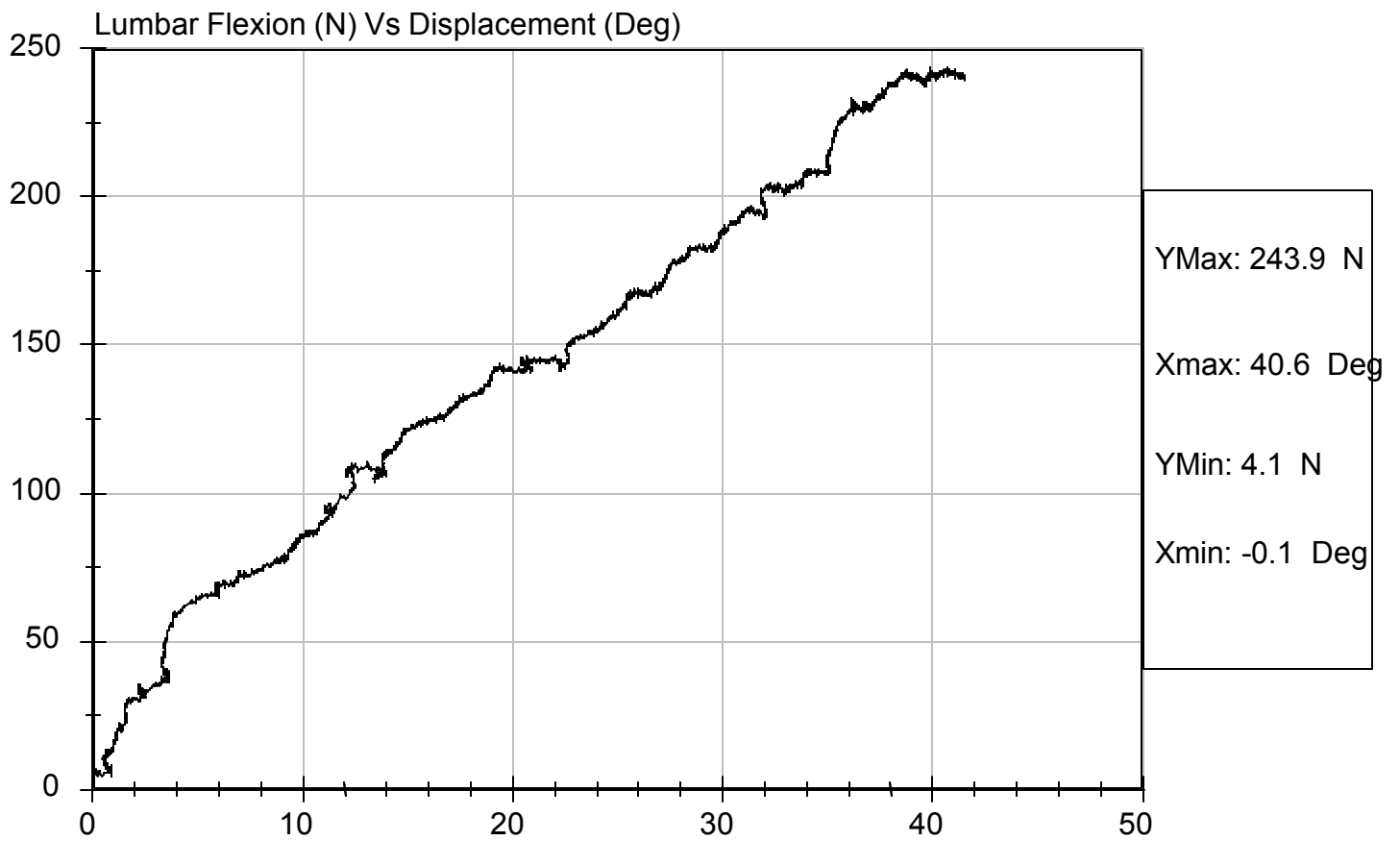


Test Description: Lumbar Flexion

Test Date: 4/2/09

Component: D09715

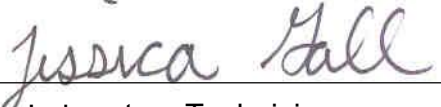
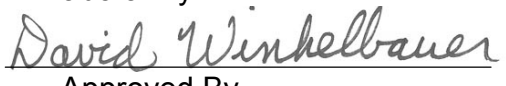
Speed: 0 ft/s, m/s



SID Calibration Data Sheet
Side Impact Dummy
Inspection Checklist

ATD Serial No: 036

Test Part	Items Checked	Result
Skin	Visual inspection	Pass
Head	Visual, ballast, accelerometer mount	Pass
Neck	Visual	Pass
Spine Box	Visual, ballast, accelerometer mount	Pass
Rib Cage	Visual, measure	Pass
Sternum	Visual	Pass
Lumbar Spine	Visual	Pass
Abdomen	Visual	Pass
Pelvis	Visual, palpate, accelerometer mount	Pass
Upper Legs	Visual	Pass
Knees	Visual	Pass
Lower Legs	Visual, range of motion	Pass
Ankles	Visual, range of motion	Pass
Feet	Visual, range of motion	Pass
Joints	1 to 2 g range	Pass
Other		Pass


Laboratory Technician

Approved By

04/2/2009

Test Date

APPENDIX D
CALIBRATION INFORMATION

DUMMY AND VEHICLE CALIBRATION DATA

	INSTRUMENTS FOR PASSENGER DUMMY NO. 037		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	P63210	Endevco	2/10/2009
Lower Rib Y	P63206	Endevco	2/10/2009
Lower Spine Y	P52257	Endevco	12/05/2008
Pelvis Y	P59283	Endevco	12/05/2008
Upper Rib Redundant Y	P63213	Endevco	2/10/2009
Lower Rib Redundant Y	P63215	Endevco	2/10/2009
Lower Spine Redundant Y	P52282	Endevco	12/05/2008
Pelvis Redundant Y	P59321	Endevco	12/05/2008

	INSTRUMENTS FOR DRIVER DUMMY NO. 036		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	P47096	Endevco	2/11/2009
Lower Rib Y	P52171	Endevco	2/11/2009
Lower Spine Y	P59301	Endevco	2/11/2009
Pelvis Y	P47093	Endevco	2/11/2009
Upper Rib Redundant Y	P47106	Endevco	2/11/2009
Lower Rib Redundant Y	P52170	Endevco	2/11/2009
Lower Spine Redundant Y	P59303	Endevco	2/11/2009
Pelvis Redundant Y	P47094	Endevco	2/11/2009

	VEHICLE AND MDB ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Right Front Sill X	G29-X14	Entran	3/12/2009
Right Front Sill Y	G29-X39	Entran	3/12/2009
Right Front Sill Z	G16-Z11	Entran	3/12/2009
Right Rear Sill X	L02-Z41	Entran	3/18/2009
Right Rear Sill Y	L12-Z05	Entran	3/18/2009
Right Rear Sill Z	L12-Z02	Entran	3/18/2009
Floorpan @ Rear Axle X	H11-L01	Entran	11/12/2008
Floorpan @ Rear Axle Y	H25-L01	Entran	11/12/2008
Floorpan @ Rear Axle Z	G29-X50	Entran	11/12/2008
Left Rear Sill Y	J23808	Endevco	3/12/2009
Left Front Sill Y	J26-H02	Entran	3/18/2009
RR Occupant Compartment Y	A29-N17	Entran	2/16/2009
Left Lower B-Post Y	P28960	Endevco	11/13/2008
Left Mid B-Post Y	AKAD6	Endevco	10/07/2008
Left Lower A-Post Y	J35916	Endevco	12/13/2008
Left Mid A-Post Y	AGAY0	Endevco	12/18/2008
Driver Seat Track Y	L02-Z21	Entran	3/18/2009
Vehicle CG X	J23-M13	Entran	11/13/2008
Vehicle CG Y	J23-M09	Entran	11/13/2008
Vehicle CG Z	J26-H11	Entran	11/13/2008
MDB CG X	L02-Z22	Entran	11/13/2008
MDB CG Y	L02-Z25	Entran	11/13/2008
MDB CG Z	L02-Z05	Entran	11/13/2008
MDB Rear X	D12-X13	Entran	12/13/2008
MDB Rear Y	D12-X16	Entran	12/13/2008